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INFORMAL TESTS IN TEACHING TEXTILES AND CLOTHING

MABEL BARBARA TRILLING AND ADAH HESS

The University of Chicago

It is now generally recognized that standardized tests have brought about great improvement in many subjects of the curriculum. A limited number of such tests have been constructed in home economics, but, thus far, none of these have been standardized. The subjects that have clearly defined their aims or purposes—arithmetic, reading, spelling, and writing, have developed standardized tests which may be used throughout the country. Home economics, in common with geography, history, civics, and science, is still vague in its purposes, and really has no well defined objectives. The grade in which the work is begun, the subject matter taught, the method of teaching, and the standards of attainment have varied with the locality, the preparation of the instructor, and the purpose for teaching. It is easily seen, therefore, that to give standardized tests to large groups of students, in the various school systems, requires a degree of organization that does not at present exist in the home economics field.

We are quite in agreement with the teachers of home economics who feel that they do not want to standardize their work, if by standardization one means ignoring the needs of the individual student, or teaching material with no regard for local interests. We believe, however, that in all communities and in all situations there are certain fundamental facts, certain important principles, certain abilities that should be developed, certain bodies of knowledge that must be learned, which are common to all textile and clothing teaching. These, we feel, should be stated in no uncertain terms before attempting to formulate the daily recitation, the weekly or monthly test, or the course of study.

After we have clearly defined the objectives for teaching textiles and clothing, it then becomes necessary to ascertain to what degree the pupils have mastered this information. Since at present we have no standardized tests in the home economics field, and since some time must elapse before any of the tests now being developed become standardized, we suggest a plan already in use in some of the other subjects of the curriculum, i. e., the use of informal tests. The reasons that have been given for the use of informal tests are: they may be used for diagnosing situations for the individual pupil and school that would not be reached by the standardized test; they can be given during a normal recitation, thus doing away with the artificial conditions created by standardized tests; they secure more definite results than the ordinary examination; they will help to establish minimal essentials and may be used as a means of comparison in classes, schools in the same town, and in a wider distribution when desired; they secure for the teacher a body of facts in addition to her own judgment. To the teacher of home economics, probably more than to the teacher in any other field, the informal test will be a means of helping toward the goal of objective measurement.

An informal test is organized by the class-room teacher; the material used for the test is that which she considers most vital in her teaching. It is a test with a personal touch, worked out for the benefit of her individual class and situation. The first requisite for a test is that it measures some definite ability or product. The teacher must clearly define her reason for giving the test, and the outcomes she desires. She must then select intelligently the material that will measure these outcomes.

This paper gives an illustrative analysis of the objectives which should be in the mind of the teacher in giving a course in textiles; it also offers several informal tests which may be used to determine whether the objectives have been attained. The analysis of the objectives is, of course, a necessary preliminary to the formulation of the tests.

Let us assume that a course in textiles is to be given to juniors and seniors in high school, with special emphasis upon the selection, buying, and use of clothing for the girl of high school age. The specific abilities that should be expected from this course are: ability to select and buy clothing wisely and discriminatingly; ability to evaluate factory-made, made-to-order, and home-made garments; ability to give proper care to clothing; ability to appreciate and understand something of the indus-

tries connected with clothing manufacture; ability to pass intelligent judgment upon the need for proper textile legislation; ability to recognize defects, imitations, and adulterations in fabrics; ability to evaluate the worth of bargains, seasonal sales, fire sales, removal sales; ability to buy clothing with respect to its hygienic qualities.

It is quite evident to the teacher of textiles that the above abilities will be acquired through learning certain facts, exercising certain judgments, having interests and habits developed. It will be necessary, therefore, to determine for each of the abilities the specific things that must be learned or done, in order to be able to devise tests that will measure accurately the accomplishment of the pupil. For example, the ability to select and buy clothing, wisely and discriminatingly, requires: knowledge of the structure of the textile fibers; knowledge of the characteristics of the fibers; ability to identify standard materials with regard to names, prices, widths, and use; knowledge of the weaves generally used in the construction of fabrics, and the relation of these to the wearing qualities and costs of materials; knowledge of a technical vocabulary, which will help in reading and understanding books, and articles; ability to perform the simple tests that may be used in the household, in order to determine quality and value of materials to be purchased; knowledge of such processes of manufacture as are necessary as a basis for judging materials when purchasing; knowledge of some of the economic factors involved in production and consumption; knowledge of the possible ways in which fibers and fabrics may be adulterated.

From the above analysis it will be seen that this subject which we call textiles, involves a range of information, the power to reason or pass judgment, and the ability to appreciate and understand certain social, industrial, and economic situations. The material selected for the course in textiles suggested above, and for our informal tests, has been based upon a study of the articles on textiles in the JOURNAL during the past three years; upon the tabulation of the content of thirteen books, at present used as reference or text books in elementary and secondary schools; and upon the judgments of six teachers in the field, four college teachers who have either taught or are at present teaching textiles, a high school teacher, and a home economics vocational supervisor. This material was selected with care, because we believe that before deciding upon basic material, to be incorporated in a course of study, it is important that we have the consensus of many expert

judgments and not merely the opinion of one teacher. Furthermore we desired to select that material which is common to most textile teaching. Thus we speak a common language, and it will be quite possible to formulate tests that are similar in subject matter and construction, which will check up results or note progress of both teacher and pupil. For example, the informal test determining the pupil's knowledge of materials, and their adaptability and suitability for specific use in clothing and house furnishing, may be given in any community, or at any school level, when the pupil has finished a study of fabrics. The test is illustrated in exercises I and II.

Tests similar to these are the Bowman-Trilling Tests, described in the monograph, "Home Economics in American Schools.[1]" They may be used as informal tests, and offer suggestions to the textile and clothing teacher for formulating tests suited to her special locality and needs.

TEXTILE TEST NO. 1

EXERCISE I

Wool Materials Suitable for Garments and Housefurnishing

Name..... Date.....
School..... Grade.....

Below is a list of garments and household furnishings. After each article are several materials. Underline those materials which you consider most suitable for making the article. Work fast and see how many you can mark, but remember that it is more important that you mark correctly than that you mark a great many. Your score depends on the number that you mark correctly.

Example: Kimono: veiling, challis, serge, cashmere. Begin when I say, "begin," and stop when I say, "stop."

1. Suits: serge, poiret twill, challis, chinchilla.
2. Coats: bolivia, chiffon, felt, cheviot.
3. School dress: gabardine, jersey cloth, etamime, velour.
4. Bath robe: cashmere, flannel, alpaca, melton.
5. Overcoats: cravenette, cheviot, poplin, panama.
6. Skirts: whipcord, tricotine, albatross, challis.
7. Banners: bunting, felt, basket cloth, crepon.
8. Capes: tweed, broadcloth, eolienne, crepe.
9. Rompers: poplin, shepherd's plaid, velour, voile.
10. Bloomers: serge, mohair, velveteen, broadcloth.

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[1] Home Economics in American Schools. Supplementary Educational Monograph Vol. II, No. 6 Chicago: Department of Education, University of Chicago, 1920.

TEXTILE TEST NO. 1

EXERCISE II

Cotton Materials Suitable for Garments and Housefurnishings

Name..... Date.....
School..... Grade.....

Below is a list of garments and household furnishings. After each article are several materials. Underline those materials which you consider most suitable for making the article. Work fast and see how many you can mark, but remember that it is more important that you mark correctly than that you mark a great many. Your score depends on the number that you mark correctly.

Example: Dresses: calico, net, gingham, muslin. Begin when I say, "begin," and stop when I say, "stop."

1. Curtains: cretonne, flannel, scrim, ticking.
2. Aprons: calico, buckram, bobinet, lawn.
3. Towels: dimity, scrim, huckaback, turkish toweling.
4. Waists: voile, madras, eider down, damask.
5. Skirts: net, gabardine, indian head, cheesecloth.
6. Graduating dress: percale, organdie, flaxon, percaline.
7. Night gowns: nainsook, longcloth, gingham, voile.
8. Infant's coats: pique, velveteen, seersucker, dotted swiss.
9. Middies: duck, lawn, galatea, batiste.
10. Kimonos: crepe, flannelette, denim, khaki.

Lack of space prevents us from presenting, for the work in clothing construction, a detailed analysis similar to the one given for textiles. We offer, however, a simple informal test, designed to measure the ability of a pupil in threading the sewing machine. By using this test, it is possible to determine the ability of an entire class in threading a sewing machine without testing each girl individually or providing a machine for each pupil tested. The test is easily and quickly graded and may be given at any time during the school year or immediately after the pupils have been taught the use of the sewing machine. A sample of the test is shown on the next page.

The informal tests given in this study are only intended as suggestions relative to the kinds of tests the textile and clothing teacher may organize for use in her classes. It is hoped that many textile and clothing teachers will organize and use informal tests. In order that, at some time in the near future, at a textile conference, comparisons may be made, we are suggesting that directions, similar to those which we use for Textile Test No. 1, be used in conducting similar tests.

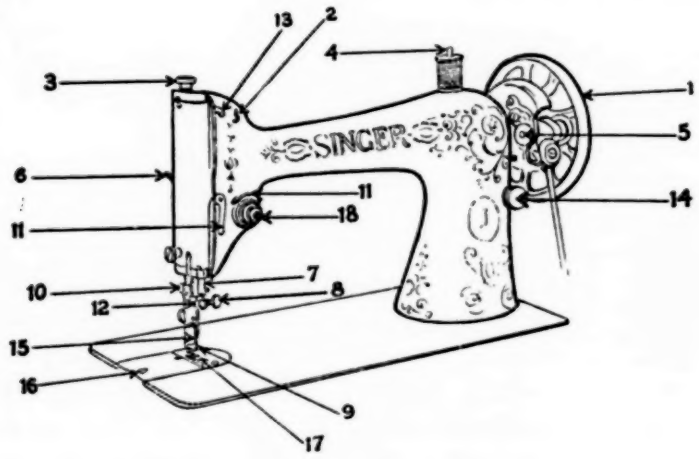
SEWING MACHINE TEST

Name..... Date.....
School..... Grade.....

In the picture given you, the various parts of the machine head are numbered. Complete the directions started below for threading the Singer sewing machine, by writing and identifying by number the various parts of the machine necessary for threading it, in the order in which the thread passes to meet the eye of the needle.

Directions for threading

To thread the Singer sewing machine, place the spool on the spool pin (4) over the thread guide (?)



Directions for giving and scoring textile test no. I

The examiner should remain at the front of the room throughout the entire test. She should set the pupils at ease at the beginning of the test by being pleasant and by avoiding anything that would create a tense situation. Give the test naturally and quietly, and with as little departure from the normal classroom conditions as possible.

Before passing the test, write the *example* that is found on the test sheet on the black board, and explain to the students just what they will be expected to do. Also tell them to wait for the signal, "begin," and to stop immediately when the signal, "stop," is given.

To score the test, give a score of five for each correct answer. The perfect score will be one hundred, since there are two materials which are suitable for each article or garment included in the test.

It will also help in our efforts to make comparisons, if the individual pupils during the year will keep a record of the tests they have taken and the scores made. The greatest benefit, however, of keeping the

record will accrue to the pupil herself, because it should contain suggestions that will act as an incentive for improving her work. We suggest that the pupil use the following plan in keeping her record.

PUPIL'S RECORD SHEET

Home Economics Tests

Name..... School.....
Age..... City.....
Grade..... State.....

NAME OF TEST	DATE	PERFECT OR PASSING SCORE	MY SCORE	WHAT SHOULD I DO TO IMPROVE MY SCORE?
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

For the purpose of helping to formulate definite objectives in teaching textiles and clothing, and in order that we may have the consensus of opinion of many teachers in the field, we suggest that the interested teacher make a list of those topics which she thinks should be common to all textile teaching, and which she intends to use in her informal tests, and send them to the writers of this article. We shall be glad to tabulate this material, and to send the results to those who desire them.

AN EXPERIMENT IN TEACHING HEALTH

VELMA PHILLIPS

State Normal School, Dillon, Montana

This experiment was carried on in a Normal College. Teachers in our elementary schools are urged and expected to put emphasis upon the teaching of health; therefore the normal schools have an especial task, namely, to raise the personal health standards and practices of our future teachers, not only for their personal happiness but to inspire their pupils in the cultivation of proper health habits. If health is to be taught properly the teacher should furnish an object lesson in health.

PROCEDURE

The class was composed of 20 students, all of whom were planning to be teachers in the elementary schools, and were taking the regular two year diploma course. On the first day the purpose of the class was explained as

follows: (1) that emphasis was to be placed upon the nutritional needs of the body, wise choice of food, food values, and the effects of cooking; (2) that all students were to become part of an experiment to ascertain the effect of putting into practice this knowledge (twenty health habits were recorded and of this number seven were to be reported upon daily); (3) that a record was to be kept of the sicknesses and minor ailments, such as headache, cold, insomnia, stomach disorders; also reports of their general vitality, abundant energy, and freedom from that feeling of being "tired and worn out."

All students were examined by the school nurse and physician, as follows: weight, height, pulse, respiration, previous illness, throat, mouth, nose, eyes, heart, and blood. The physician found the class free from serious defects. All eye trouble was receiving attention; the hemoglobin count fell below 100 in only two cases; there was one bad case of tonsils, which was not attended to until after the experiment closed; none of the class was seriously over or under weight. The health of the class was so much above the average that the only tangible results which could be expected for the three months, would be in the following points: (1) freedom from colds, headaches, and minor ailments; (2) increased state of vigor and vitality.

The health habits recommended furnished the outline for the course.[1] Some of these seem childish for college women but were included because the students were to use the material in teaching in the grades. The habits were:

1. Sleep eight hours every day with windows open.
2. Stay out of doors three hours every day, one hour in brisk exercise.
3. Take "setting up" exercises every morning for 10 or 15 minutes.
4. Stand and sit erect.
5. Take at least two full baths every week.
6. Brush teeth properly for five minutes every day.
7. Wash hands before every meal.
8. Keep finger nails clean.
9. Cultivate the habit of keeping fingers, pencils, etc. out of mouth.
10. Have a bowel movement every morning.
11. Avoid undue exposure in cold weather because of foolishly thin clothing.
12. Avoid unnecessary worry and imaginary sickness.
13. Drink or eat in some form a pint of milk a day.
14. Drink six cups of water a day.
15. Eat regularly three times a day.
16. Eat sweet foods only at the end of a meal.
17. Eat some fruit every day, preferably fresh fruit.
18. Eat two vegetables every day, if possible one leafy vegetable.
19. Drink tea or coffee only once a day, if at all.
20. Learn to like all palatable foods, "Eat for nourishment, not amusement."

The following were considered by the group the most important for daily reports: Hours of sleep, hours out of doors, number of vegetables eaten (excepting potatoes), fresh fruit eaten, sweets eaten between meals, calories eaten per day, bowel movement (indicate if cathartic is taken).

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[1] Lesson plans are on file in the JOURNAL Office.

Laboratory work consisted in applying the principles of cooking to those foods which are of nutritional value but frequently unpopular, namely, cereals in different forms, winter vegetables, milk soups, desserts made with milk, dried fruits and vegetables. Emphasis was placed upon economy in the use of food, and the relationship between the family budget and the food budget.

RESULTS

Results from such an experiment cannot be so specific as one would desire, and perhaps can be justly criticised, in that they may be influenced by personal opinion, prejudice, and desire on the part of the students to "make a good grade." These points were taken into consideration, and effort was made to eliminate causes for error by developing in the class an experimental state of mind. The last day the class was assured that all grades were complete, and were asked to answer the following: 1. Has the the experiment changed your mode of living in any way? 2. Can you see any improvements in your health? 3. Have you learned to like any food material?

Eleven stated that they had been eating more fruit.

Ten spent more time out of doors. The average for the class was 1.66 hours per day; for the ten, 1.93 hours per day; for the others, 1.34 hours per day.

Seven had more sleep. The average for the class was 7.96 hours per day; for the seven, 7.98 hours per day; for the others, 7.96 hours per day.

Eight had acquired the habit of eating sweets less often between meals.

Ten drank more milk. Eleven drank less tea and coffee. Eight of those who drank more milk drank less tea and coffee.

Six ate more cereal, especially oatmeal. One ate less meat.

Different members of the class had learned to like cereals, cabbage, carrots, leafy vegetables, milk, onions, parsnips, prunes, spinach, squash, turnips, tomato soup.

Three noted an improved condition of the skin; eight were freer from headache, three were freer from constipation; two were freer from indigestion; nine had more vitality; one was freer from colds. As a rule, those to whom the "health habits" meant changes in their mode of living noted improved health.

CONCLUSION

It was more evident than in the average class beginning food study that the importance of the principles of right living and correct diet were impressed upon their minds. One student, considered by the faculty as below the average in mental ability, successfully put her knowledge of health habits into application in her third grade teaching.

Four students, during health week, planned and supervised the serving of hot school lunches and emphasized the importance of proper breakfasts and dinners by planning, and putting into the hands of each child, typical breakfast and dinner menus for the week. One student, a member of the editorial staff of the school paper, published to offer suggestion to teachers of the state on improved educational methods, wrote up the experiment advising its adoption.

For "Health Week" the members of the class were asked to write suitable one-act plays to teach health habits and to interest people in living them. These plays showed that they had become quite observing of dietetic sins and their results.

Health classes, in which emphasis is placed upon the application of principles of cookery and of nutrition, need not detract from this knowledge but should serve to make it more vital.

NEW YORK NUTRITION COUNCIL

Report of Committee on Training Standards[1]

The Committee on Training Standards for Nutrition Workers realized that training was essential not only for the success of the nutrition worker but for the success of the work itself. Knowing that the number of competent nutrition workers is small and that the demand is a growing one, the committee aimed to be practical by erecting standards that are within reach; moreover. in formulating standards that were too high the committee felt it would not only limit the possible number of workers but would put boundaries on nutrition work itself as it would confine the work to those communities that could afford to pay the high salary of an expert. The committee tried to make its recommendations general, yet definite enough to be helpful. In specifying the ground to be covered during the couse of study the committee aimed to think in terms of "subjects" rather than of "courses." No attempt is made to state the length of time needed to complete the course. Much will depend on the previous training of the applicant. The personnel of the students taking the course may be divided into two classes.

A. Students who elect these subjects during a regular four-year college course.

B. Nurses, instructors in physical education, social workers, domestic science teachers, and other teachers who wish to supplement their previous training in order to become nutrition workers.

[1] Prepared for the first annual meeting of the New York Nutrition Council, May 20, 1921.

TRAINING FOR FIELD WORKERS IN NUTRITION

Definition. A field worker in nutrition is one who works with the physician on the nutrition of children either in nutrition classes, or the homes, or both.

Prerequisite to training. The prospective nutrition worker should be a high school graduate.

Training. Subjects taken during training should be on a collegiate basis.

Course of Study

	hours*	per cent
Food and nutrition (general chemistry a prerequisite): Chemistry of nutrition, chemistry of food, dietetics, food economics, cookery	690	46
Physiology (including bacteriology) and hygiene	240	16
Psychology and methods of pedagogy (including child study)	120	8
Sociology and economics	240	16
Case study (study of family problems)	120	8
Record keeping	45	3
Symptomatology (to be given by a physician)	30	2
Public speaking	15	1
Total	1500	100

*An hour is a period of 50 to 60 minutes.

TRAINING IN FIELD WORK

Intensive course of three months under supervision.

Age limit. The nutrition worker should be at least twenty-one years old before beginning work.

TRAINING FOR SUPERVISORS OF NUTRITION

There are organizations large enough to employ several nutrition workers. In order that a program may be worked out that will be coherent, it is very desirable that a nutrition supervisor be appointed by these organizations. The committee recommends that in order to qualify for this position the applicant should not only complete the subjects outlined above but should have a year's experience in field work. She should also have attended a nutrition seminar in order that she may become acquainted with recent research work in nutrition and prepare herself to follow developments in this subject in the future. For the person about to become a supervisor of nutrition in the schools, a course in school administration is recommended. It is also recommended that the supervisor of nutrition be a college graduate.

The following persons were asked to form the committee on training standards for nutrition workers: Mary G. McCormick, State Department of Education, *Chairman*; Dr. Hugh Chaplin, Bellevue Hospital; Lucy H. Gillett, A. I. C. P.; Annie V. Goodrich, Henry Street Settlement; W. F. Johnson, Children's Aid Society; Dr. Mary Swartz Rose, Teachers College; Mrs. Amy D. Storer, Atlantic Division, American Red Cross; Dr. Ira S. Wile, Mt. Sinai Hospital; Dr. Jessie F. Williams, Teachers College.

STUDIES ON THE EFFECT OF STORAGE UPON THE KEEPING QUALITY OF CERTAIN VEGETABLES CANNED BY THE ONE PERIOD COLD PACK METHOD[1]

ALICE BIESTER, MILDRED WEIGLEY, AND WINIFRED CASE KNAPP

Division of Home Economics, University of Minnesota

An examination of the process periods advocated for several states lying wholly or partially in the same latitude as Minnesota suggests that some factor other than those commonly recognized may possibly account for the varied recommendations (see table 1).

TABLE 1

Showing the process periods advocated in bulletins published for use in seven northern states

VEGETABLE	NUMBER OF MINUTES ADVOCATED FOR PROCESS PERIODS							
	Oregon (1)	North Dakota (2)	South Dakota (3)	Wisconsin (4)	New York (5)	Vermont (6)	Maine (7)	U. S. Dept. Agr. (8)
Beet greens	90	150	120	180	180*	120	90	120
Beets	90	60–90	90	90	90	90–120	90	90
Carrots	90	60–90	90	90	90	90	90	90
String beans	120	90–120	120	120	180*	90–150	120	120
Corn	180	180	180	180	180*	180–240	180	180
Tomatoes	22	22–25	22	30	22	20–30	22	22
Pumpkin	60		120		120*	90	60	120

* The intermittent sterilization process is recommended.

In some of the process periods listed in table 1, the times allowed are probably so short that complete sterilization is not effected. Castle (9) questions the completeness of sterilization for vegetables packed in glass jars and heated in a water bath one hour on each of three successive days. Incomplete sterilization may not always result in a product which is subsequently considered inedible. Bushnell (10) found that some of his experimental packs which apparently kept well contained bacteria or spores, especially if acid were present or if the container were sealed to exclude air. Out of three hundred seventy samples of canned vegetables purchased in different parts of the United States Weinzirl (11) found that seventy-six or 20.5 per cent of the marketable cans contained viable bacteria. Certain cans which contained bacteria were incubated at temperatures varying from 28° to 37°C. for periods varying from one week to one month without resulting in spoilage. Weinzirl attributes the keeping quality to the absence of oxygen in the cans, thereby emphasizing the importance of a vacuum in cans.

[1] Data taken from thesis submitted by Winifred Case Knapp in partial fulfillment of the requirements for the degree of Master of Science.

Cheyney (12), who examined one-hundred forty-five merchantable cans of vegetables, reports the presence of viable organisms in 6.2 per cent of the cans.

The available data on the effect of storage temperature upon the keeping quality of canned vegetables suggest the need for additional experiments. Bitting and Bitting (13) emphasize the importance of cooling cans quickly before stacking, and advocate the selection of cans from the interior of the stack as well as from the exterior, in picking representative cans for examination. The interior of a large stack of cans is reported as remaining warm from ten to twenty days. Genung (14) found that storage at room temperature resulted in less spoilage than storage in a bacteriological incubator, and advocates immediate storage in a cool place.

It is evident from these citations that the presence of bacteria does not necessarily result in an inedible product. It is probable that bacteria or spores which are capable of rendering a canned product inedible find a cool place of storage less favorable for their development than a warm place. The present investigation has been undertaken for the purpose of determining the effect of different conditions of storage upon the keeping quality of certain vegetables canned by the one period cold pack method. No attempt has been made to study the bacterial flora of the canned products. It is probable that some bacteria in canned goods are quite as harmless as many of those which are taken with uncooked food products, whereas others may be highly objectionable because of the deleterious effect which they exert upon the quality of the canned product or because of the ill effects which are experienced by the consumer. The conditions, under which vegetables should be canned in order to destroy all microörganisms which would render the canned product inedible or harmful to the consumer, constitute a field in which additional bacteriological studies are needed.

EXPERIMENTAL

The following vegetables commonly canned in Minnesota were selected for this investigation: beet greens, beets, green string beans, wax beans, carrots, corn, tomatoes, and pumpkin. This group offers variety in chemical composition, in physical properties and in the parts of the plant commonly used for food. The experiments reported in this paper were performed at an altitude of approximately 1000 feet. In order to work as speedily as possible, all equipment and specially prepared data sheets were assembled before the preparation of the vegetables was begun. Every effort was made to obtain vegetables of good texture gathered on the day of canning, to have them free from apparent disease or decay, and to hold them in good condition until used. The vegetables were thoroughly washed in tap water and suitably prepared for blanching.

The vegetables were blanched by steaming except in the case of tomatoes which were scalded to loosen the skins. Inasmuch as steaming results in the loss of lesser quantities of mineral salts than boiling (15), a tin household steamer 5½ inches high and 11 inches in diameter, having a tightly fitted flanged cover was placed on a three quart basin, so fitted to the steamer that little or no steam was lost from the boiling water. The period of blanch-

ing was determined by noting the hour at which the cover of the steamer was in place and that at which the steamer was removed. In selecting the blanching period, a time of such a length was selected that further shrinkage of the vegetable was reduced to a minimum. One or two minutes were allowed for tomatoes, 5 minutes for pumpkin, 7 minutes for string beans and corn, 10 minutes for carrots, 15 minutes for beet greens, and 25 minutes for beets.

The blanched vegetables were cold-dipped for one minute, allowing nine quarts of tap water to one steamer of vegetables. The temperature of the water varied from 11° to 30° C. The beet greens were drained for five minutes in a colander. The mass of greens was loosened and turned with a fork for one minute of the draining period. String beans, corn, and pumpkin were drained for a minimum period of five minutes. No constant amount of time was allowed for beets, carrots, and tomatoes.

The vegetables were not graded before packing. Beet greens and tomatoes were packed whole. Beets under 2¼ inches in diameter were packed without cutting, and the larger beets were cut horizontally into three or four pieces. The string beans were cut into lengths varying from ¾ to 1¼ inches. For blanching, carrots under one inch in diameter were left whole; those over 1 inch and under 1¾ inches in diameter were cut into two lengthwise pieces; and the larger ones were quartered lengthwise. After the cold dip the carrots were cut horizontally into pieces ½ to ¾ inch in length. The corn kernels were cut from the cob at approximately one-half their depth and the pulp remaining was scraped from the cob. The pumpkin was cut into pieces approximately ¾ inch by 1¼ inches by 1¼ inches in size. The containers used were glass pint jars fitted with porcelain lined metal covers and a good grade of rubber.

In general, the vegetables were packed to secure maximum economy of jar space, provided that the vegetable could be removed with the retention of the shape of the pieces, if desired. An effort was made to have the packs of each vegetable of comparable density. When the densities of the packs were computed in terms of the grams of cold dipped vegetables per cubic centimeter of jar capacity, the figures for the several series of each vegetable varied within rather narrow limits. The average densities for the vegetables were as follows:— 26 jars of beet greens, 0.933; 27 jars of beets, 0.764; 9 jars of wax beans, 0.739; 26 jars of green string beans, 0.788; 18 jars of carrots, 0.796; 9 jars of sweet corn, 0.945; 30 jars of tomatoes, 1.025; and 27 jars of pumpkin, 1.017. Subsequent comparisons between the keeping quality of individual vegetables and the densities of the packs showed no constant relationship between these factors within the limits of the densities represented in these experiments. In somewhat wider ranges of densities, Denton (16), working with carrots, and Castle (9), experimenting with spinach and carrots, found that greatly increasing the density of the pack decreased the rate at which heat penetrated to the center of the jar.

In all cases, where water was used as such or as an ingredient of brine for completing the pack, tap water was boiled vigorously for five minutes, allowed to settle, and decanted. A good grade of commercial salt was used. No liquid was added in packing the tomatoes or pumpkin. In some packs of the former, liquid was discarded with both vegetables, the pulp was heaped above the top of the jar, a teaspoon of salt was added to each jar and the cover was pressed down before adjusting for processing. Water and one teaspoon of salt per pint were added to complete the pack of beet greens. It was found convenient to place a portion of the two per cent brine in the jar before introducing string beans or corn into their respective jars. Two per cent brine was also used for carrots and beets.

Of the methods of processing in common use, the water bath was chosen because the outfit for this method can be devised from ordinary household equipment, and consequently this method is very commonly used. The processing outfit consisted of an aluminum kettle, 10½ inches high and 9 inches in diameter, having a closely fitted set-in cover. A wire rack raised the jars one inch from the bottom of the kettle. With sufficient water to allow a depth of one inch above the covers of four pint jars standing on the rack, the volume of the water bath was 5½ quarts. The median temperature of the bath was 75°C. when the first jar was immersed, a temperature low enough to avoid breakage and high enough to retard

the action or development of certain undesirable microörganisms. The bath was held over a very low flame until all four jars of the series were immersed immediately after the packing of each. The median temperature of the bath when Can IV was immersed was 80°C. The bath was slowly brought to the boiling point, previous trials having indicated a relatively small loss of liquid with such a procedure. The covers of the jars were screwed lightly against the rubber. In a few cases five jars were processed instead of four jars.

The process periods chosen were for the most part representative of those advocated in bulletins for the northern states. In order to test the rate at which interior temperatures changed, a record of the hours at which 80°C. and 98°C. were reached was kept for Can IV of each series, using the method described by Denton (16). The process periods cited in this report represent the number of minutes elapsing from the hour that the water bath was vigorously boiling after the packed jars were immersed to the hour that the jars were removed one at a time, for sealing. After testing the seals, the jars were allowed to stand, right side up, in a laboratory until cool.

The extremes of temperature to which canned vegetables are subjected in the home are those obtaining in a vegetable cellar and in a kitchen. In these experiments the only storage place available, which compared in temperature with a good vegetable cellar, was a large cement walled root cellar built partially into a hillside. No control of temperature was possible in this cellar, and the extremes of temperature noted with a maximum and minimum thermometer were 0° and 23°C. Conditions of temperature comparable to a heated summer kitchen were provided in a bacteriological incubator, the temperature of which ranged from 28° to 32°C. with the exception of the temperature for one tomato series and for the pumpkin experments where the limits were 25° and 30°C.

Triplicate series of each process period tested on each vegetable were run, each series for a given process period being stored under a different condition. One series was kept for at least four months in the root cellar, a period arbitrarily chosen as representative of storage for a season in a home cellar. A second series was placed in a bacteriological incubator for ten days. The third series was stored in the root cellar for a period of ten days for the purpose of determining the correlation between the keeping quality of vegetables stored for a ten day period in a bacteriological incubator and a cellar. The canned products were placed in storage on the day upon which they were canned, with the exception of a few incubator series which were kept in the laboratory over night, because the incubator was difficult of access at night.

Members of the instructional staff of the Division of Home Economics judged the keeping quality of the canned products. All jars which were considered inedible by the majority of the judges are recorded as "inedible" in Table 2, although in several cases the degree of spoilage was so slight that the judges disagreed.

An examination of the data in Table 2, in which "thermometer jars" have been omitted, shows very clearly that storage in the incubator for 10 days resulted in far greater spoilage—33 jars out of 62 jars—than storage in the root cellar for 4 months—5 inedible jars out of 60 jars—or storage for 10 days in the cellar—4 inedible jars in a total of 53 jars. Data given on the records of the judges made it possible to compare the quality of the vegetables for these series. Fourteen of the 29 edible jars stored for ten days in the incubator graded below "good" in flavor; five of the 49 edible jars stored in the root cellar for ten days graded below "good," and five of the 55 edible jars stored for four months graded below "good."

For beet greens, there was great similarity in all of the factors for which a record was kept, save those of storage temperature and keeping quality, the 60 minute process period showing total spoilage for the incubator series. A 60 minute process period for beets proved unreliable irrespective of the conditions of storage. A 90 minute process period was satisfactory only for the products stored in the root cellar. Even the beets processed for 120 minutes and stored in the incubator, while judged edible, showed a very low grade for every jar when compared with the other edible jars of the series.

TABLE 2

Showing the effect of storage upon the keeping quality of vegetables

VEGETABLE	PROCESS PERIOD	KEEPING QUALITY					
		Root cellar storage, 4 months, 0°–23°C.		Incubator storage, 10 days, 28°–32°C.		Root cellar storage, 10 days, 0°–23°C.	
		Number jars, edible	Number jars, inedible	Number jars, edible	Number jars, inedible	Number jars, edible	Number jars, inedible
	minutes						
Totals		55	5	29	33	49	4
Beet greens	60	3	0	0	3	3	0
	90	3	0	3	0	3	0
	120	3	0	2	0	3	0
Beets	60	2	1	0	3	1	2
	90	3	0	1	2	3	0
	120	3	0	3	0	3	0
Wax beans	120	3	0	3	0	3	0
Green string beans	90	5	1	2	4	4	1
	120	2	1	0	6	3	0
Carrots	90	1	2	0	3	2	1
	120	3	0	2	1	3	0
Corn	180	3	0	3	0	3	0
Tomatoes	22	6	0	3	3	3	0
	30	6	0	4	2	3	0
Pumpkin	60	3	0	0	3	3	0
	90	3	0	2	1	3	0
	120	3	0	1	2	3	0

Some of the spoilage for green string beans may undoubtedly be attributed to the fact that it was impossible to obtain a uniformly good quality of raw material. It is significant, however, that two of the nine jars, stored for four months, and one of the eight jars, stored for ten days in the cellar, spoiled, while ten of the twelve incubator-stored jars of beans were judged inedible. One-fourth of the jars of carrots stored in the cellar spoiled, whereas two-thirds of those placed in the incubator were inedible.

Sweet corn is the only vegetable reported in these experiments in which the incubator-stored products graded uniformly as high as the cellar-stored products. That all of the microörganisms found in vegetables may not be destroyed is suggested by the fact that, in several cases in which tomatoes kept well, the interior temperature of the jar at no time exceeded 80°C. Both tomatoes and pumpkin showed a high proportion of inedible jars for the incubator-stored products, with no spoilage for the cellar stored jars.

DISCUSSION OF RESULTS

Inasmuch as vegetables from the same source were used and subjected to comparable treatment for the series compared, the time or temperature of storage is the principal variable. Examination of the experimental data shows no constant relationship between the length of time that the vegetable was held above a temperature of 80° or 98° C and spoilage. It should be noted, however, that the judging data showed certain observations common to many of the thermometer jars. The amount of liquid in the thermometer jar at the end of the process periods in approximately one-half of the series exceeded that of the other jars in the same series, and in many cases the difference was marked. Thompson (17) found that the rate at which heat penetrated a jar of canned vegetables was favorably influenced by the presence of free liquid. It is possible that the temperature noted in the thermometer jar was higher than that in the other jars in some of the series.

It is evident that the merits of a given procedure in canning cannot be considered apart from the temperature to which the stored product is to be subjected. Where it is desirable to test out a canning procedure within a relatively short period, it should be noted that the keeping quality of vegetables stored for a ten-day period in a cool cellar closely parallels that of vegetables stored for a minimum of four months in a cellar. The results of these experiments offer one possible explanation for the failure of some workers to verify conclusions stated by other investigators. It is entirely possible that a process period which proves successful when the product is stored in a Minnesota cellar might not be satisfactory if a canned vegetable with a similar history were stored in a cellar in the south. Again it can be seen that a product which would keep satisfactorily in a cool place of storage might spoil if the only place of storage were a hot foods laboratory or an apartment kitchen. Furthermore, the large amount of spoilage occurring in the incubator-stored vegetables suggests the desirability of storing canned products in a cool place immediately.

SUMMARY

The more important findings in the experiments on the canning of beet greens, beets, string beans, carrots, corn, tomatoes, and pumpkin may be set forth as follows:

1. The increased time required for processing certain vegetables when stored in an incubator, together with the greater amount of spoilage which occurred in the incubator-stored vegetables, indicates that the length of the process period cannot be considered apart from storage conditions. Moreover, a process period that is successful in one section of the country may prove unsatisfactory when used in a warmer climate.

2. Approximately one-half of the incubator-stored vegetables spoiled, whereas about one-twelfth of the vegetables stored in the cellar were inedible.

3. When the grade for flavor as well as the spoilage of canned vegetables is considered, the deleterious effect of the incubator-storage upon the keeping quality is further emphasized.

4. The amount of spoilage occurring in a ten-day period in a lot of canned vegetables may probably be taken as a fair index of the amount of spoilage which will occur in a period of four or more months of cellar storage.

5. The relatively large amount of spoilage observed in the incubator storage indicates the desirability of storing vegetables in a cool place immediately after canning.

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A PRACTICAL PROBLEM IN DIETETICS

MARTHA KOEHNE

University of Washington, Seattle

A university course in dietetics should be two-fold in nature. First, it should connect up with preliminary courses in food preparation, physiology, and chemistry, both organic and physiological, in a scientific presentation of the fundamental principles of nutrition and of all the recent developments in this science; and it should afford opportunity for training in proper valuation of published articles relating to nutrition. Such training is needed by home economics teachers, dietitians, nurses, institutional managers, and by those engaged in other professions requiring a knowledge of food preparation and selection. It is also a prerequisite for all advanced work in nutrition. Second, such a course in dietetics should train girls for homemaking. It should thoroughly impress on all students taking the course, the importance of proper selection of food for themselves and their families. It should develop such an interest in the subject that they will keep up their reading along these lines, for its great practical value to themselves and others.

The following studies, which were made in the first quarter of their course by the students in the dietetics classes in the University of Washington, as part of their laboratory work, were designed to meet this second need. About 70 per cent of the girls were fortunate enough to be living in their own homes, and this report is concerned chiefly with this group.[1] Charts and statistics may, at first thought, seem far removed from the problem of feeding oneself and family. However, the students derived so much benefit from this portion of their work that the plan of the experiment is presented as a suggestion for others. The results are presented for their own value and interest.

PROCEDURE

In October the students began a study of their customary diet. Those living at home, with the cooperation of their mothers, kept accurate record of all the food consumed in their families for one week, wherever possible keeping the record in terms of weights of raw materials used. The total number of meals served was also recorded. The students were instructed that the meals were to be planned as nearly as possible along well-established, customary lines.

Classifications of the foods used were made as follows:

Group 1. Sweets (including sugars, candies, syrups, jams, jellies, preserves, bakery cookies and cakes).

Group 2. Seed foods, cereals, and cereal products (including bread, crackers, flour, breakfast foods, rice, macaroni, and other cereal products, dry peas, and dry beans.)

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[1] Girls who ate at the University Commons, or at boarding houses, weighed their individual portions, using the tables in Locke's Food Values, for their calculations.

Group 3. Non-leafy vegetables (including all tubers and root vegetables, pumpkin, squash, sweet corn, etc.).

Group 4. Green vegetables (including spinach and other greens, lettuce, celery, cabbage, green beans and peas, Brussels sprouts, and cauliflower).

Group 5. Fruits of all kinds,—fresh, canned, and dried.

Group 6. Meats, poultry, fish, shell fish, and game.

Group 7. Meat substitutes, such as eggs, cheese, and nuts.

Group 8. Milk of all kinds (fresh, dried or evaporated, whole, skimmed, or buttermilk).

Group 9. Other dairy products, such as butter, cream, ice cream.

Group 10. Other fats, oils, and fat rich foods.

No record was kept of coffee, tea, spices, baking powder, vinegar, because they are of practically no food value.

At the end of the week, totals for individual items in each group were obtained; weight of water-free, waste-free food, in individual items in each group, calculated; and weight of protein and the calorie value similarly calculated. After the individual items were completed, the total weight of water- and waste-free food, protein, and total calories for each group were added separately and a chart prepared which showed total original weights, total water- and waste-free weights, total protein weights and total calories for each group. The per cent of actual food and also of protein derived from each group, total calories per person per day, and total weight of protein per person per day were then calculated.

Results were criticized in class, keeping in mind the number of children, state of health, and degree of activity of the members of the household. The students were shown where their diets were faulty and how they could be improved. As was to be expected, many of them were too low in leafy vegetables, fruit, and milk, and too high in starchy foods and in meat.

2. After the students understood what constitutes a balanced diet, those living in their own homes repeated the study, but with this difference,—they planned the meals themselves and agreed to make a sincere effort to see that their families were given the proper combination of food. If possible, they were to do this with no greater expenditure of money than was customary in their families. In addition to data collected in the first study, they recorded the amount of money spent for each type of food, calculated the precentage distribution of total amount spent among the ten groups, and the average cost per person per meal. Where foods had been canned at home, cost was charged at retail grocery prices.[2]

DATA

Leafy vegetables increased up to 500 per cent. Milk consumption increased up to 600 per cent. Fruit consumption, in most cases, increased remarkably.

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[2] In the first study, eggs and cheese were included in Group 9 and nuts in Group 10, which makes some difference in comparison. Also the first 3 groups were taken as a whole, not separated as in the later method. The strict classification into ten groups as outlined earlier is much more desirable and will be adhered to in the future. Distribution of cost will be calculated for all such studies.

In Chart I we see that ½ of the actual food of these families was derived from groups 1, 2, and 3, at about ¼ of the total cost. Meat and meat substitutes constituted less than ⅛ of their total food, but cost almost as much as the ½ derived from groups 1, 2, and 3. About ¼ of the total food was derived from milk, butter, cream, and ice cream, at a little over one-fourth of the total cost. Approximately the same amounts of money were spent for meat, milk, butter, fruit, and cereals. Leafy vegetables are about as expensive as meat, and fruits much less expensive than meat. Groups 1, 2, and 3 are in every way the cheapest foods.

From "Dietary Customs"[3] by Velma Phillips and Laura Howell, figures are given comparing Dr. Sherman's suggested desirable distribution of food cost with that determined on investigating this matter in Italian, Jewish, and Negro districts in New York. Dr. Sherman suggests spending 25.0 per cent for grains, 20.0 per cent for fruits and vegetables, 20.0 per cent for meat and eggs, 20.0 per cent for milk and cheese, and 15.0 per cent for miscellaneous items. The averages found among the 105 families, whose dietary habits were studied by Miss Phillips and Miss Howell, showed the following expenditure: 23.8 per cent for grains, 13.8 per cent for fruits and vegetables, 33.5 per cent for meat and eggs, 13.3 per cent for milk and cheese, and 15.5 per cent for miscellaneous items.

In Chart II, the averages are compared directly with similar averages made from the list of foods which the United States Department of Labor[4] gave as being required for a family of five for one year. A more liberal allowance of leafy vegetables, such as cabbage and spinach should have been provided in this Government budget. Considering the fact that there are three growing children in this family, the milk allowance should have been larger. These increases could take the place of some of the cereal foods, for which a very liberal allowance is made. On the whole, the budget stands comparison very well.

CHART I

*Average distribution of foods and cost for 15 families**

GROUP	PER CENT DISTRIBUTION OF TOTAL WATER- AND WASTE-FREE FOOD		PER CENT DISTRIBUTION OF TOTAL PROTEIN	PER CENT DISTRIBUTION OF TOTAL COST	
1. Sweets	10.7			7.4	
2. Cereals	27.5	50.4	34.6	12.0	25.5
3. Non-leafy vegetables	12.2			6.1	
4. Leafy vegetables	1.4	12.1	4.1	5.2	18.4
5. Fruits	10.7			13.2	
6. Meats	8.8	11.5	34.5	15.0	23.5
7. Meat substitutes	2.7			8.5	
8. Milk	14.1	21.5	25.2	14.3	27.3
9. Other dairy products	7.4			13.0	
10. Other fats	4.4	4.4		4.4	4.4

Average calories per person per day	2600
Average grams protein per person per day	86.5
Average cost per person per meal	18.9 cents

* The fifteen families, taken from the second study, are those which showed the use of a pint or more of milk per person per day. A few of these still showed too low a per cent of leafy vegetables.

[3] See *Journal of Home Economics*, Sept. 1920, p. 396.

[4] *Monthly Labor Review*, June 1920.

CHART II

*Detailed chart of nine families showing best balanced diets compared with government budget**

Family	No. 1	No. 2	No. 7	No. 8	No. 10	No. 11	No. 13	No. 21	No. 25	AVERAGE OF 9 FAMILIES		GOVERNMENT BUDGET	
Number of meals	40	40	78	49	76	57	63	95	90				
Per cent actual water-free edible food in various groups													
Group 1. Sweets	15.5	10.2	2.6	11.0	2.8	9.6	12.3	8.2	8.0		8.9		10.7
Group 2. Cereals	23.4	13.0	30.0	24.1	25.0	42.6	33.0	28.0	34.0		28.1		43.0
Group 3. Non-leafy vegetables	10.8	16.5	11.0	8.1	20.0	7.7	16.2	18.0	5.0	49.6	12.6	61.7	8.0
Group 4. Leafy vegetables	3.6	3.0	2.6	1.6	3.2	1.8	1.0	1.0	1.0		2.1		0.5
Group 5. Fruits	4.7	4.7	24.0	12.1	9.0	11.6	11.3	6.8	12.0	12.8	10.7	5.5	5.0
Group 6. Meats	9.9	3.9	4.0	10.5	17.0	5.2	5.0	9.5	11.0		8.4		7.0
Group 7. Meat substitutes	2.3	7.3	1.7	2.5	2.8	1.2	3.2	1.5	1.6	11.1	2.7	8.7	1.7
Group 8. Milk	12.8	26.5	10.1	13.4	13.5	11.9	11.3	10.8	19.0		14.4		12.3
Group 9. Other dairy products	7.8	9.8	7.4	13.7	1.9	7.9	4.6	9.4	5.0	21.9	7.5	15.9	3.6
Group 10. Other fats	8.6	4.9	4.8	2.7	3.2		2.0	5.7	1.9	3.7	3.7	4.1	4.1
Grams of protein per person per day	78.7	72.6	89.3	106.6	74.4	64.2	113.1	63.1	90.7		83.6		
Per cent distribution of protein in food groups													
Groups 1, 2, 3	29.9	18.0	40.0	18.4	31.3	44.3	36.7	33.3	40.0		32.4		
Groups 4, 5	3.5	4.4	7.2	6.4	3.3	6.1	4.9	3.9	2.8		4.7		
Groups 6, 7	40.0	32.6	20.9	49.9	40.3	27.5	35.3	37.5	18.4		35.6		
Groups 8, 9	24.3	44.1	26.2	23.6	24.2	22.6	22.1	25.0	36.3		25.6		
Calories per person per day	2625	2285	2955	2515	2920	2100	2990	2075	2277		2527		

* Prices current in Seattle in the past year were used in computing cost. Milk prices in this study varied from 9 to 14 cents per quart.

Per cent distribution of cost in food groups													
Group 1	6.0	4.8	5.3	2.9	12.1	6.0	10.5	5.4	3.0		6.2		7.5
Group 2	10.4	8.0	14.0	13.2	10.0	17.9	14.6	8.6	12.8		12.2		14.0
Group 3	8.4	8.1	7.1	6.5	4.2	3.3	4.4	8.8	6.0	24.7	6.3	28.1	6.6
Group 4	6.8	9.4	3.6	6.6	2.7	4.6	7.8	3.9	5.0		5.6		2.0
Group 5	16.0	6.5	16.0	13.4	11.2	26.0	14.4	8.8	16.0	19.9	14.3	18.0	16.0
Group 6	15.0	8.4	8.9	10.0	19.7	10.7	6.8	19.0	10.0		12.0		19.0
Group 7	10.2	11.0	9.8	9.7	6.0	7.8	13.9	7.4	6.0	21.1	9.1	24.8	5.8
Group 8	10.2	27.6	9.3	14.9	14.3	8.7	13.7	15.5	15.0		14.4		12.3
Group 9	9.9	12.7	18.0	22.3	13.2	14.5	9.9	12.5	12.0	28.3	13.9	19.9	7.6
Group 10	6.0	3.1	7.0	1.3	5.0		3.9	4.7	13.0	4.9	4.9	4.7	4.7
Cost per person per meal	$0.18	$0.18	$0.23	$0.23	$0.17	$0.15	$0.194	$0.15	$0.123		$0.178		

No. 1—2 women.
No. 2—2 women.
No. 7—5 adults—3 women, 2 men (1 man ill).
No. 8—3 adults, 1 child.
No. 10—3 adults, 1 child.
No. 11—3 adults.
No. 13—3 adults.
No. 21—4–5 adults (Practice Cottage).
No. 25—4 adults, 1 child.

CONCLUSIONS

The families of the students who did this work in their own homes became very much interested in these studies, and this interest alone was worth all the work involved. Fathers, mothers, brothers, and sisters learned to know the foods that contained the necessary vitamines, the foods valuable chiefly for their energy, those providing protein of good quality, and those containing an abundance of roughage and mineral matter especially calcium and iron. The students were able to get this information across to their parents in this practical way, and they feel that their dietary studies were of great value.

Furthermore, these students learned that it was entirely possible to provide their families with sufficient food properly balanced, at no greater expense than that involved in providing the ordinary bread, meat, and potato diet. One student did this at an average cost of only 12.3 cents per person per meal for the week studied (see Chart II, no. 25).

A PLEA FOR AMERICAN COOKERY AND HOME DISHES

Most of us who have tasted both American and foreign cooking prefer our home dishes, when well prepared, to anything else for a steady diet. Those who travel much and those who depend upon restaurants and hotels miss these home dishes and wish they could get them. Some of the more progressive hotels realize the importance of this matter and have tried to remedy it by installing home kitchens as a part of their equipment. Some of the best restaurants, dining-cars, cafes, and cafeterias also specialize on "home" food. For instance, one evidence that the wishes of the traveling public are not being overlooked, is shown by the Northern Pacific Railway, which has adopted "home" foods and "home" cookery in its dining-car service. A book of instructions for dining-car stewards and chefs on this railway has recently been published by G. W. Nelson,[1] who makes the following statement:

"The art of cookery in all its branches is in such process of evolution that a few years only are sufficient to completely change the methods of preparing dishes once enthusiastically received by the public. Our departure from French and French cookery, and the adoption of plain English designations, and the plain home-like cookery have won the approval of our patrons. The variety of food products adaptable to dining-car service is small compared to that which the large hotel may use with unlimited combinations. We have, therefore, given you a limited specification of dishes that may be run on your specials, together with their prices, and you will strictly confine your menu-making to those things designated, and do not at any time run anything on your specials that deviate from the instructions. All dishes must be prepared according to the recipes which we provide, and these, together with the portion list will be issued to you in circular form."

TABLE NAPKINS IN HISTORY

Generally discarded from fashionable tables at the close of the eighteenth century, the napkin was seldom used or seen by the more modest epicures of Horace Walpole's time. A finger glass and a dessert doily in George the Third's time were placed on the table, on the removal of the cloth, and the latter was regarded as the elegant and sufficient substitute for the old table towel.—*The Table.*

[1] *Hotel Monthly*, 29 (1921), no. 334, pp. 58 and 59.

FOR THE HOMEMAKER

THE ROMAN KITCHEN

CORNELIA G. HARCUM

The Royal Ontario Museum of Archaeology, Toronto

"We may live without poetry, music, and art;
We may live without conscience, and live without heart;
We may live without friends; we may live without books,
But civilized man cannot live without cooks."

Nor can he live long without an organized kitchen. Primitive man prepared his meals in the open air; so no doubt did the Roman shepherds in the days before Rome was the city of the seven hills. In very early times, however, man provided himself with shelter and cooked his meals beneath that shelter.

The Roman house was at first quite simple. The only room, or at least the principal room, was the the *atrium*. In it all the life of the family centered. Here was placed the marriage couch; here the mistress of the house worked at spinning with her maids. In the center of this room there was a large hearth which was used both as an altar on which sacrifice was offered to the gods, and as a kitchen range for cooking food. Just above the hearth, a hole in the roof served as a chimney to let out smoke. Such a primitive arrangement was no doubt very defective and the accumulation of soot must have blackened the ceiling and rendered the kitchen anything but attractive. Indeed the word *atrium* may be derived from *ater*, black, and so mean the black room. In the *atrium* too the family dined and perhaps slept as well.

This early simplicity of the Romans prevailed much longer in the country districts than in the city of Rome. In country houses the *atrium*, which was the kitchen as well, long remained the center of the social life of the family, as has the kitchen in farm-houses of a later time. But in the city the growth of refinement soon banished the preparation of food from the *atrium* which now became a more elegant room. Probably as early as the days of Plautus, 254–184 B.C., a special room for cooking,

called the *culina*, had been added to the Roman house. Certainly such a room is mentioned several times in the plays of that author.

The *culina*, or kitchen, was usually a small room located in an unobtrusive part of the house. Vitruvius, a Roman writer on architecture, advised that it be placed on the warmest side of the court. Varro recommended that it be in the posterior part of the house. The same advice was given by Columella who explained that it should be far from the bedrooms and living rooms of the family on account of danger from fire. The kitchen, however, is too humble to figure largely in Latin literature and we must depend chiefly on archaeological excavations for accurate information concerning it. Old Vesuvius made things decidedly unpleasant for the inhabitants of Pompeii on a certain day in 79 A. D.; but by covering that city deep with lava it rendered a real service to men of modern times, for nowhere has antiquity been so literally caught alive as in this buried city. In one of the houses unearthed, a pot stood on the hearth ready to prepare the daily meal. At Pompeii, where every house had a kitchen, the room was usually small with no fixed location. In accordance with the recommendations of the authors it was generally in a rather remote corner where it would least interfere with the arrangement of the rest of the house. Even in the more pretentious houses at Pompeii the size is not more than sixteen by nineteen feet; but the establishments of the rich at Rome no doubt contained larger kitchens.

Near the kitchen there was sometimes a bakery with mill and oven, though after 171 B.C., in the city of Rome at least, bread was usually made in public bake-shops. In many of the larger houses as in the House of the Faun and the House of the Silver Wedding at Pompeii, there was a bath, which by an ingenious idea of the Pompeian architect was placed next to the kitchen for facility in heating water. If there was a stable, as in the Villa Rustica at Boscoreale, it, too, opened into the kitchen. Near the kitchen were also one or more small store rooms for provisions, and, in the House of the Vettii at Pompeii, a small room which may have been for the cook. One would naturally expect to find the dining-room in close proximity to the room for preparing food. The army of slaves in the Roman world probably rendered this arrangement less necessary than at the present time, for these rooms were not always adjoining. Sometimes, however, there was a hole in the wall between them so that food could be passed from one to the other.

How was the Roman kitchen furnished? Not so differently from the kitchen of today as one might suppose. The most important feature was, of course, the hearth which corresponds to the modern kitchen range.

This was built of masonry against one of the walls. Fire was made on top, and underneath there was occasionally a hollow place in which fuel was kept. Sometimes the hearth had projections of masonry rising above it on which utensils were supported over the fire, sometimes they rested on tripods. Near the hearth there was occasionally a small oven not large enough to have been used for bread, but probably intended for pastry.

Over the hearth there was a window to let out smoke. In addition to the hearth of masonry the Roman kitchen frequently contained a small portable stove in which charcoal was burned. One of these in the Naples Museum has at one end four movable cross-bars for broiling, and, at the other, two round frames to hold cooking utensils. The kitchen table was necessary then as now. Sometimes this was of masonry with top of white marble; sometimes, no doubt, it was of wood. To complete the kitchen one finds even a sink provided with pipes to carry off water and waste.

So far the Roman kitchen was not altogether unlike our own, but in one respect, it was rather unique. We should scarcely think of decking the walls of a modern kitchen with frescoes or paintings, but the walls of several Pompeian kitchens show remains of such decoration. In the house which is called the House of the Silver Wedding, there are vestiges of a painting of two household gods and near them a serpent coiled about an altar, representing the genius of the place. On the walls of another house is the goddess of Fortune with a cornucopia symbolic of plenty. Not only were there paintings of the household gods in the kitchen, but occasionally a niche for images of these gods was placed high up in the wall. The Villa Rustica at Boscoreale has a niche ornamented to represent the facade of a diminutive temple.

In addition to furniture and paintings, the ancient kitchen was finally fully equipped with all necessary utensils, in many respects the direct ancestors of those of today. Time and experience have enab ed us to improve even on the practical Roman from the point of view of utility, yet with the exception of the fireless cooker, aluminum ware, and electrical appliances there are few modern utensils which were not found in an ancient kitchen. In artistic qualities, however, the cooking utensils of the ancients were superior to those of our own day, for they always combine simplicity of form with beauty of line and proportion.

In the early days of the Roman Republic there were in the average home very few cooking utensils, for few were needed. The national diet

of the early Romans consisted of a kind of porridge called pulse, which preceded even bread as an article of food. This was cooked in a wide-mouthed open bowl as were also the vegetables which completed the meal of the Roman peasant. By wealthier Romans a public chef corresponding somewhat to our caterer was employed for an occasion more elaborate than the family dinner. Professional cooks took their stand in the market-place with their utensils, and were hired to prepare a wedding feast, a dinner party, or a birthday entertainment. They took to the home of their employer, as does the modern caterer, both their assistants and their utensils.

Later, Roman life became gradually more complex and daily meals more elaborate. When the army returned from the East, after the war with Antiochus, oriental luxury invaded Rome, bringing, among other things, dainty dishes and cooks from Asia Minor. As cooks became more numerous and meals more elaborate, utensils for their preparation were multiplied. There were kettles of various shapes and sizes for boiling vegetables, fowl, and meat;pronged forks for taking meat from caldrons; frying and baking pans both round and oblong; gridirons for broiling and spits for roasting a large piece of meat or the whole boar which formed the *piece de resistance* of a formal dinner party. There were also saucepans of various shapes and sizes. In Pompeii, pans with indentures which seem to have been used for frying eggs or for cooking small cakes have come to light. Bread pans or moulds were very early, and loaves baked in them have been found at Pompeii. There were also pastry moulds of fancy design, colanders, kitchen knives, ladles, spoons, sieves, and mortars and pestles for pounding the condiments so lavishly used by the Romans as well as for crushing grain. Both balances and steel-yards were used for weighing the quantity of the ingredients in a recipe, and measuring utensils of various sizes have also been found. Petronius even mentions a hand-mill of boxwood for grinding pepper, and there is in the Royal Ontario Museum in Toronto[1] an article which was probably a meat-chopper. Of course the kitchen of olden days contained also a number of vessels used for storing grain, oil, and honey, the ancient substitute for sugar.

[1] Roman cooking utensils may be seen today in almost every museum, and the Royal Ontario Museum of Archaeology in Toronto is fortunate, not only in possessing many individual pots and pans, but also in having a fairly complete kitchen outfit of a single house. It was found near Thebes and contains twenty-seven pieces of bronze designed chiefly for stewing or boiling.

The materials of Roman cooking utensils were chiefly three: terra-cotta, bronze, and iron. In the days when luxury prevailed in Rome some of them were made of more expensive materials. In Petronius we read of a silver grill which was brought to Trimalchio's table.

The small size of many of these vessels does not indicate that the Romans were gourmands. In this connection one must bear in mind the fact that the French, our connoisseurs in modern cookery, still use small utensils and that food is most delicious when prepared in small quantities.

Where were these utensils made? The question naturally arises, as one studies in detail the cooking utensils which have been found in such numbers in Pompeii and other parts of Italy, in Egypt, and all the Roman colonies, and notes their similarity. Their number suggests that the industry of their manufacture must have been a large one, for in spite of the fact that many have been thrown away in rubbish heaps because archaeologists have deemed them of little importance in comparison with other treasures turned up by the spade, a great many still remain. Their similarity indicates community of manufacture, and it is probable that the great majority of bronze vessels, kitchen utensils included, came from extensive factories at Capua, which were busy from the first century B.C. to the third century A.D. These Capuan wares had a wide sale. Not only were the best products used for the luxurious Italian and Greek houses, but there was an active export trade in them to the north as far as Scotland and northern Sweden. The factory system in Italy in ancient days, however, was probably confined to few industries. Roman laws did not favor corporations, and there were few men at Rome sufficiently wealthy to establish factories, for, although slave labor was cheap, materials were expensive.

The Roman kitchen was, then, not so very different from our own. If one may trust Latin authors, even the chef had some of the characteristics of his successor of today. He was ingenious, thievish, witty, greasy, and inclined to be boastful. One of the cooks in the comedies of Plautus brags that even Jupiter feasts on the odors from his saucepans, and that, when he does not cook, the king of gods goes hungry to bed. Another ancient cook claims that when he removes the lids from his kettles even mourners, returning from a funeral, smile.

THE SYRACUSE HOME BUREAU

EDITH M. BARBER

In Charge of the Bureau

The Syracuse Home Bureau Thrift Kitchen, although a veteran of the war, is still in business helping the homes and the community of Syracuse with problems of living. The Thrift Kitchen, organized by the New York State Food Commission during the war, became a part of the New York State and Federal extension work at the close of the war, and is the headquarters of the Syracuse Home Bureau whose scope is as wide as its name indicates.

The Kitchen which was excellently equipped for canning during the food conservation days is still used for that purpose during the season. Women bring their vegetables, fruits, and jars and do their canning under the direction of the trained workers on the staff of the Home Bureau. One thousand more jars were done in the season of 1920 than during the war year of 1918. The large pressure cookers are used in the winter also by organizations preparing in large quantities for suppers and sales. A small charge is made to cover the cost of fuel.

The Kitchen is also used for classes in food and nutrition work conducted for housewives, for girls' clubs, for public health nurses, and for volunteer aids; and it has also been used for the dressmaking and millinery classes. As the food and clothing work have been overlapping too much for comfort, another room which connects with the office has been rented to be used for the clothing classes and for a Woman's Exchange which the Home Bureau is promoting and which will open as an outlet for handmade articles this fall.

One of the largest services rendered by the Bureau is the information service. The telephone rings constantly with requests for all kinds of information. The questions range from "How much sugar shall I use for jelly?" to "Will you help me to plan a diabetic diet for my husband?" and from "How can I take out a peach stain from my best tablecloth?" to "What kind of a refrigerator do you recommend?" The slogan "Call Warren 8079. Ask the Home Bureau" justifies itself. There are many personal calls at the office where special help is given for individual problems, and a large attendance on Home Bureau Day, Friday of each week, when a talk or demonstration is given.

All the Home Bureau activities, however, are not centered in the Thrift Kitchen; coöperation is given to all health and civic agencies in the

city. An active part was taken by the Home Bureau in organizing a milk campaign undertaken by the combined health agencies of the city which raised the consumption of milk twenty-five per cent. Follow-up work was done throughout the year and a yearly milk week instituted. Nutrition classes are held in coöperation with the doctors and nurses in school time, and accurate records kept in an endeavor to make nutrition instruction part of the regular school program. Classes are held to help public health nurses to deal more easily with the large problems of nutrition which they meet daily. When possible, classes in homemaking are conducted in social centers for organizations requesting such help. In fact, as far as its staff of four workers allows, the Home Bureau acts as a clearing house for homemaking problems. Several more workers could be used to advantage but at present the budget, which is provided by a combination of county, city, and private funds, permits of no increase in the staff. Under the present interpretation of the Smith-Lever law, federal funds cannot be used for city work, although we have the advantage of the franking privilege and the cooperation and supervision of the extension service of the New York State College of Agriculture.

That city women, as well as country women, need and demand the services of the Home Bureau is shown by the constant use which they make of it in the few cities where it is organized. Over five hundred women show their appreciation by paying a dollar a year membership fee. This, however, gives them no more privileges than the non-member, except that of showing materially their interest in better homes and a better community, which is the aim of the Home Bureau.

One of the difficulties encountered in the manufacture of ice cream is the formation of small gritty particles. These are found to consist of tiny crystals of lactose or milk sugar which are quite hard and when present cause the ice cream to be described as "sandy." This subject is now receiving study by the Dairy Division of the Department of Agriculture, which is trying to determine the conditions under which these crystals form so that they can be avoided in the industrial manufacture of ice cream.

EDITORIAL

Will you help to increase the circulation of the JOURNAL through regular subscriptions, student subscriptions, or renewals? The official publication of the American Home Economics Association should be in the hands of every woman trained in home economics, or interested in any phase of this broad field; in the library of every school and college offering courses in home economics. Here is the record of one interested woman, Miss Milam, Oregon Agricultural College, who sent letters to a number of colleges urging subscription campaigns: 575 student subscriptions, 23 full rate subscriptions, 9 memberships. Miss Milam had previously carried on a campaign at Oregon Agricultural College which resulted in 52 new subscriptions and 15 renewals.

Returns from schools who sent in 15 or more subscriptions are as follows:

Oregon Agricultural College	67	Stevens Point Normal	26
University of California	53	Simmons College	24
University of Illinois	53	Lewis Institute	21
Ohio State University	38	Stout Institute	18
University of Minnesota	32	Pratt Institute	16

Will you help to make the JOURNAL widely interesting by sending us material or getting other workers to do so? We want concise articles, reports, opinions, ideas, news, from the teacher, the research worker, the extension worker, the homemaker, the institutional worker, the bank consultant, and all other representatives of home economics work. We want to make your JOURNAL better and bigger. The executive committee has appointed the following associate editors to keep in touch with various departments: Day Monroe and the Executive Secretary, News; Edith Barber and Mrs. Hazzard, Social Welfare; Florence Ward, Extension; Katharine Blunt, Foods; Cora Winchell, Education; Ruth O'Brien, Textiles; Henrietta French, Institutional Economics; Alice Biester, Bibliography.

Will you use the JOURNAL? Miss Harris, Office of Extension North and West, U. S. Department of Agriculture, has just written: "We are sending out to our home demonstration agents references to the articles by Miss Bailey, Miss Denton and Mrs. Yeatman, and will call attention to the New York Item." Many of our contributions are valuable and usable.

We have 6,000 subscribers.
Help us to make it 10,000 by Christmas.

High Fat in Diabetic Diets. Dr. Max Kahn[1] recently pointed out the necessity for limiting the fat intake of diabetics as the only means of preventing acidosis. Fenlon[2] reported successful treatment of diabetic patients by restricting the fat, maintaining the protein intake at a moderate level, and rapidly reducing the carbohydrate until glycosuria disappears. The tolerance is built up by gradual addition of carbohydrate, and finally the fat allowance is increased until it approximately equals the protein. These points of view are in accord with the custom of giving a diet low in caloric value made up largely of protein, because of the necessity for omitting carbohydrate, and because of the fear of producing acidosis if more than a minimum of fat is allowed.

A different point of view is emphasized by Newburgh and Marsh[3] who maintain that a high protein diet either produces glycosuria, from being too liberal, or renders the patient unfit for daily activities, if it is too restricted. They have studied the effect of high fat, low protein, low carbohydrate diets in the treatment of 73 diabetics, most of them severe cases. A patient on entering the clinic or hospital is placed on a diet of 900 calories derived from about 90 grams fat, 10 grams protein, and 14 grams carbohydrate. After the patient has been sugar free for 1 to 2 weeks, his diet is increased to about 1400 calories, representing 140 grams fat, 28 grams protein, and 15 to 20 grams carbohydrate. For large individuals a second increase is made, later, reaching about 1800 calories, with 170 grams fat, 30 to 40 grams protein, and 25 to 30 grams carbohydrate. By the use of high fat diets not only are they able to prevent the appearance of glycosuria but existing glycosuria is cleared up; the excretion of acetone bodies ceases soon after the adoption of this treatment; satisfactory nitrogen balance is maintained; the patients leave the hospital and clinic much improved and are in excellent physical condition months afterwards.[4]

[1] Kahn, M.: Problems of the Dietitian in the Care of Outpatient Poor Suffering from Diseases of Metabolism, *Jour. Home Econ.*, 13 (1921), p. 213.

[2] Fenlon, R. L.: Retention of Protein During Diet Reduction to Relieve the Glycosuria in Diabetes Mellitus, *Amer. Jour. Med. Sci.*, 131 (1921), p. 193.

[3] Newburgh, L. H., and Marsh, P. L.: The Use of a High Fat Diet in the Treatment of Diabetes Mellitus, *Arch. Int. Med.*, 26 (1920), p. 647.

[4] It is of significance to home economics workers that the management of the special diets, their choice and computation to meet the requirements, their preparation and administration to the patients, and their recording, were under the supervision of Dorothy M. Stewart, Dietitian in the University of Michigan Hospital.

Thrice Boiled Vegetables For Diabetic Patients. Definite information on the actual carbohydrate content of thrice boiled vegetables presented in recent papers is welcome to those planning diabetic diets. The assumption that changing the water several times during boiling of vegetables effects a more complete removal of the carbohydrate appears to be correct; in the case of some vegetables practically all of the carbohydrate can be so removed provided a sufficiently large volume of water is used in boiling. O'Reilly and McCabe[1] show that 20 parts of water to 1 of vegetable in each of the 3 extractions are more effective than 10 parts of water, and are sufficient to render vegetable marrow, lettuce, and celery carbohydrate-free, and canned spinach, canned asparagus, turnips, beets, and onions approximately free, while other vegetables studied retain small percentages of carbohydrate. Increasing the number of extractions of vegetables with hot water was found by Wardall[2] to remove the carbohydrate more completely. Cammidge[3] states that with a large excess of water in thrice boiling there is difference in the completeness of removal of carbohydrate from different vegetables. Ten and twenty-four per cent, respectively, of the carbohydrate of the raw vegetable remained in the thrice boiled cabbage and cauliflower analyzed by Olmsted.[4] From available data it appears that vegetables boiled once retain one-half to two-thirds of their carbohydrate, while those boiled three times generally contain less than one-third of the carbohydrate of the raw vegetable.

That the time of boiling, the size of the pieces into which the vegetables are cut, and especially the volume of boiling water used are the chief factors in the removal of carbohydrate is shown in the papers cited and also in one by Myers and Croll[5], where evidence is presented to show that a large proportion of the carbohydrate of many vegetables and fruits occurs in a soluble form; this is emphasized as another important factor in carbohydrate removal by boiling vegetables. These

[1] O'Reilly, L. and McCabe, E. H.: The Available Carbohydrate in Thrice Boiled Vegetables, *Jour. Biol. Chem.*, 46, 83 (1921).

[2] Wardall, R A.: Vegetable Foods for the Diabetic, *Jour. Amer. Med. Assn.* 69, 1859 (1917).

[3] Cammidge, P. J.: Boiled Vegetables for the Use of Diabetics, *The Lancet*, 2, 1192 (1919).

[4] Olmsted, W. H.: Availability of Carbohydrate in Certain Vegetables, *Jour. Biol. Chem.*, 41, 45 (1920).

[5] Myers V. C. and Croll H. M.: The Determination of Carbohydrates in Vegetable Foods, *Jour. Biol. Chem.*, 46, 537 (1921).

facts should increase the use of such vegetables in diabetic diets, since they are a pleasing addition to monotonous diets and do not necessitate overstepping the limits set for the carbohydrate intake.

Standards of Child Nutrition. When children live in surroundings nearly approaching the ideal, they grow and develop at a faster rate than those less fortunate. Benedict and Talbot[1] have recently weighed and measured 1209 boys and girls of several of the private schools in the neighborhood of Boston and eastern Massachusetts where surroundings, food, and medical care are practically unsurpassed. They have compared the height and weight of these children with that of other children, studied by them also, living in less favorable surroundings and also with the measurements of Holt, Wood, and others. Holt's measurements were made on boys of a public school in a better-class neighborhood of New York City, and Wood's on pupils of the Horace Mann school, connected with Columbia University. Wood's tables of height and weight measurements are included in so much of the material sent out by the different organizations dealing with the problem of the underweight school child, that his averages are perhaps more used than any others in judging the state of a child's nutrition.

The children of the private schools are taller and heavier than Wood's public school children. The private school boys are distinctly larger individuals both in height and in weight than the "average" boy of the same age, and the authors believe that everything points to the desirability of this more rapid growth. Raising our standards of child nutrition from the "average" to the "ideal" plane will increase still more the amount of recognized undernutrition in our country.

What the food allowance must be to provide for such a rapid growth in normal, active children can only be estimated. A proper determination of the total food needs of children can probably never be completely and satisfactorily made from gaseous metabolism experiments on account of the necessary, extra demands of growth. That our standard for food allowances for children has tended to be low, however, seems undoubtedly true. Benedict and Talbot give as an approximate figure the calorie output of boys as 75 per cent above the basal metabolism for their time spent in the school room. This would bring the calorie need of a ten year old boy to about 2000 without allowing for the vigorous exercise of playing, which would raise it still higher. The final state-

[1] Benedict, F. G., and Talbot, F. B.: Metabolism and Growth from Birth to Puberty. Carnegie Institute of Washington, Pub. No. 302 (1921).

ment of Benedict and Talbot is very pertinent: "One could infer, therefore, from these observations, that, aside from the possibilities of digestive derangements, it would be impossible to supply the growing child with an excessive amount of food. Every effort may legitimately be expended to secure a maximum skeletal growth and the development of children above so-called average weight. We believe that our investigation shows clearly that the average weight for children is distinctly below the ideal or physiologically desirable weight."

THE OPEN FORUM

Helping the Housewife. The following extracts from Mrs. Abel's report as state chairman of home economics for the General Federation of Women's Clubs of Maryland, may offer valuable suggestions as to ways in which clubs and home economics associations may help the women of their communities.

1. A regular weekly class has been held in Baltimore on Monday evenings, led by teachers from the staff of the Extension Division of the University of Maryland, on such subjects as Household Equipment, the Buying of Food, the Family Budget.

2. Through the generous cooperation of the University of Maryland a complete list of home economics activities under the title "What is going on in home economics in Baltimore" was mailed to a long list of women presumably interested in the subject. Doubtless the same cooperation could be secured another year in spreading the information as to courses of instruction offered in the evening classes in the high schools and given by the Y. W. C. A., the Red Cross, and other organizations.

3. It has been your chairman's privilege to assist by advice in the development of a service which has been greatly needed. The housewife has a right to disinterested expert advice in the buying of her household equipment and in the best methods of running her house as much as the farmer has a right to have fertilizers analyzed or seeds tested.

Dr. Lelia Powers of the Y.W.C.A. has been allowed by her Board of Managers to carry on an exhibit, on Saturday mornings, of household appliances and methods, and has herself been present with her assistants to answer the questions of visitors. The object has been to show the principles on which various kinds of equipment should be constructed (e.g. refrigerators, washing machines). Much attention has been given to laundry methods, labor saving devices, and healthful postures in doing housework. It is hoped that this valuable service may be continued.

Developing Unselfishness in the Clothing Class.[1] We have often heard our clothing work criticized on the ground that it is apt to develop selfishness. The girls make garments for themselves only, as a rule, study styles which are suitable to their own figure and coloring, and are seldom asked to do anything for others. Making curtains and other furnishings for the school needs is a step in the right direction, and since the war many other opportunities have arisen which serve as a means of using the clothing class to develop good citizens who are trained to think of the needs of others.

The clothing classes in our high school have made rompers for the day nursery, curtains for the girls' reserve room of the Y. W. C. A., and are now completing another project which has offered abundant training in unselfishness. The project has been so "alive" and varied that the unselfish interest aroused has been more or less spontaneous, and has gathered momentum of itself as the project has progressed. The class is furnishing the greater part of the clothing for spring and summer for a little orphan girl in Carson College, a home for orphan girls, Flourtown, Pennsylvania.

The girls in Carson College are allowed a certain amount for clothing each month, depending upon their age, and Alice, eleven years old, is allowed $8.00 per month. We were given a list of the clothes she had on hand, and also a list of the clothes she would need for spring and summer. Thus we had a real budget project to work upon with $48 (six months allowance) as our limit. This $48 had to include some things, of course, which we could not make for her, such as shoes and hose, but they had to be considered. As the first step in the project, each girl handed in a budget, apportioning the money to the best of her ability. We talked over these budgets as a class, and decided upon a fair estimate for each article. This necessitated practice in calculating the amount of material needed for the different garments, and a knowledge of the current prices for standard materials. The girls then read over the list of the clothing that Alice would need, and wrote their names opposite the garments they wished to make for her. Before any purchases were made, the girls brought samples of materials to class, and each garment was discussed and the samples criticized by the class as a whole in regard to color, durability, and appropriateness. The actual purchases were then made by the girls themselves. The

[1] From Homemaking in Wisconsin: Home Economics Teachers' Exchange Ideas, compiled by Helen Goodspeed.

cash slips were all kept and are to be turned in to the school where Alice lives, after which the money will be refunded. Very grave and sometimes almost heated consultations have been held over certain garments, as, for instance, when the makers of the spring cape, the Sunday dress, and the spring hat, were coming to an agreement in regard to the colors for these garments which would be worn at the same time.

The project has also been of benefit to the girls, in that it necessitated an understanding of children's clothes, both in regard to the type of garments worn by children of this age, and also in regard to the hygiene of clothing, the type of materials best suited for children's clothing, and other points.

We have not intended to introduce any new problems in construction as such, but have laid stress upon the budget problem, the study of children's clothes, and the social aspect of the project. Alice is to write us soon, and we are expecting pictures of her when she receives her new wardrobe, and of course this all tends to interest us more. We are quite sure that the garments will fit her because we have a list of all her measurements, and have altered the patterns accordingly. We have also borrowed a little girl of Alice's size and tried the garments on her from time to time.

This project has led to a real "social consciousness" on the part of the class. So many offers of out-grown clothing have come from the class that we have adopted children here in Madison, whom we are helping from time to time.

HELEN COMSTOCK,
Instructor, Wisconsin High School.

We keep material on hand from the associated charities. This has helped to solve the problem of furnishing work for the girl who has completed the assigned problem before the others or for some reason is not supplied with the necessary material. As the material furnished consists of partly worn garments to be made over, as well as new material, the problem furnishes ideas in economy. Some of the articles made are: rompers from men's partly worn shirts; blouses and bloomers from new and old material; small pieced baby blankets; plain dresses and aprons.

MILDRED ALEXANDER,
East High School, Green Bay.

BOOKS AND LITERATURE

Vitamines—Essential food factors. By BENJAMIN HARROW, PH.D. New York: E. P. Dutton and Co., pp. 219, 1921. $2.50.

Writing in a simple and discursive style Dr. Harrow has brought together most of the general facts of nutrition, particularly those relating to vitamines, into a book for the "popular" reader. The material is presented in a manner easy to follow and at the same time subject matter which might be assumed to be too technical for the average reader is not glossed over but is brought out by analogy or pains-taking explanation. Likewise, the use of curves so much in use in presenting the results of vitamine studies is adopted through the simple expedient of explaining the preparation of a curve. In introducing new material Dr. Harrow has incorporated considerable historical data which is not only instructive but helps to develop interest in the subject.

As a background for the discussion of vitamines the reader is instructed with regard to food-stuffs and their uses in the body, including a discussion of the relative value of proteins from different sources. Following this material comes a discussion of vitamines, proof of their existence, their occurrence, and relations to specific diseases with which they are associated. In the appendix is a collection of references for more extended reading.

In his discussion of pellagra Dr. Harrow states that this disease results from a deficient diet, *per se*. This definite attitude is unfortunate, for not all of the evidence is in favor of a dietary deficiency, in the most general sense of the word, as the fundamental cause of the disease. The infection theory has not entirely been disproved. On the other hand, all who have studied the problem admit that a deficient diet may have an important part in developing a predisposition to the disease and that an adequate diet is an important factor in insurance against the disease and in bringing about recovery.

Among those who believe that pellagra is the result of an agent other than a food deficiency, some have worked in the same districts as the investigators cited by Dr. Harrow as champions of the dietary deficiency theory. The Thompson Pellagra Commission, working in part in Spartanburg County, S. C., holds that a living organism of unidentified nature appears to be the specific cause of the disease. (For a summary of their reports see MacNeal, *Amer. Jour. Med. Sci.*, 1921, clxi, 469.) Enright (*Lancet*, 1920, cxlviii, 998) has described an outbreak of pellagra in a camp of German prisoners in Egypt in which the diet was excellent. It was this group of prisoners which was cited by the British Committee of Inquiry, and quoted by Dr. Harrow, as being adequately fed and having few cases of pellagra in contrast with the Turkish prisoners, whose diet had been inadequate and had developed many cases of pellagra. Enright does not advance a specific cause for the outbreak but does hold that a food deficiency was not the only factor involved. In the light of such evidence it is only right that we should retain an open mind with regard to the cause of pellagra.

While the book is not essentially a text, or reference book it should find use as collateral reading in courses on nutrition, such as in normal schools or in colleges where the previous training of the student is not sufficient for the use of the more detailed scientific discussions of nutrition. As a popular treatise on nutrition, for which the book was intended, it is excellent.

PAUL E. HOWE,
Rockefeller Institute for Medical Research.

Household Arts for Home and School. By ANNA M. COOLEY AND WILHELMINA H. SPOHR. New York: The Macmillan Co., Vols. I and II, 1920.

Much has been written during the past few years on the project method of teaching, but few text books have been produced which exemplify that method. Among those few, however, is this book which is designed for use in the home as well as in the elementary and junior high schools. It is written in narrative form, the story being the history of events in Sunnyside Apartment at the Ellen H. Richards School. This apartment, in which two of the home economics teachers lived, was used as a practice house for the girls studying household arts.

Volume I tells what the girls learned about the family budget, home furnishing, the care of the baby, textiles, and the selection of clothing. The furnishing of the apartment offered problems for the sewing class. The acquaintance with "Mrs. Edwards" who lived in the same building, gave the students an opportunity to learn something concerning the care and the clothing of the baby.

Volume II deals with the care of the home; selection, cooking, and serving of food; laundering; and hospitality. A food sale for the Fair and the preparation of breakfast, dinner, and supper were projects around which much of this work was organized.

In the lessons on cookery, principles controlling processes have been developed, but little or no attempt has been made to teach fundamental proportions. While the handing out of recipes for each specific occasion is a quicker method, one questions whether it does all that it should to make the individual a self reliant worker. Is it not possible to do more to emancipate her from too great dependence on the cook book or recipe file?

Unquestionably the work as presented will enlist the interest of the young girl, because each lesson develops as a result of her own every day need or that of some one in whom she is interested.

The practicality of the plan presented in the book will no doubt be questioned by many on the grounds that its success depends to a great degree on the practice house and the "model" Edwards family, neither of which is apt to be available in the average community.

The book is particularly strong in that it gives a breadth of vision concerning the responsibilities of the homemaker, and shows the possibility of a close relationship between the home and school. Neither a home economics teacher nor a student, after reading this book, could possibly be satisfied with courses in mere cooking and sewing. While one feels at times that it is a bit visionary, it must be remembered that the authors have suggested its use in connection with the plans and outlines of the individual teacher and, if taken in that spirit, it cannot fail to be most inspirational and helpful to both teacher and pupils.

MAUDE MILLER,
University of Minn.

Vocational Education. Compiled by EMILY ROBISON and JULIA JOHNSEN. New York: H. W. Wilson Co., 1921, pp. 359. $2.25.

This book is a second and enlarged edition of an earlier collection of magazine articles and essays in the field of vocational education. An entire revision of the bibliography has been made, and a number of new selections have been added to make the book more nearly complete and up-to-date.

The selection of materials is wise, giving expression to many contrary points of view and covering all the main divisions of the field. The book needs an index, however; as it is, one would have difficulty in locating references on special topics. The collection contains no comprehensive and adequate discussion of job analysis, technique of teaching, or preparation of teachers, but such lacks are not surprising in the field of vocational education.

One cannot read far without developing more respect than ever for the pioneers who began their good work of interesting educational people in the need for vocational education so many years before actual accomplishments were possible. Many of

the articles were written before the Smith-Hughes Bill was passed or the Federal Board for Vocational Education established. The frequent mention of Germany in some of the articles is interesting now and shows us how far we have gone toward the development of a plan which can be called truly American.

The book contains material which should be read by every one interested in the modern problems of American education, yet much more needs to be said and done before we can come to anything like an understanding of the aims and methods of vocational education. The study and discussion of the many viewpoints presented will lead us into more light on this difficult and pressing problem.

The section on household arts is suggestive for experienced workers in the field, but not comprehensive enough to give a complete view of the problems. The material on industrial education is far more comprehensive. The bibliography is extensive and well classified and in some cases annotated.

JOHN M. BREWER,
Harvard University.

The Social Case History: Its Construction and Content. By ADA ELIOT SHEFFIELD. New York: Russel Sage Foundation, 1920, pp. 227. $1.00.

It is no surprise to find a beauty of order set forth in *The Social Case History* which distinguishes Mrs. Sheffield's work in her own field. Her keen valuation of detail, in which a less discerning eye would fail to read significance to large issues, characterizes her study of family histories.

The home economics worker wi l find in this little volume a particular value which the title might not suggest.

The home economics specialist in making her contribution to family cohesion needs to develop a like critical attitude toward all the mass of details which her intimate work with the daily life of the family brings to her notice.

In order to see their meaning, to identify them as significant, to interpret their relation to family solidarity she needs to chart out her thinking so that she may gain an insight into the family problem and relate it to general social welfare. Mrs. Sheffield offers a challenge to the worker who does not think through a situation, and, by her orderly array of illustrations, suggests the richness to be derived from discerning values in the commonplace. The author defines the purpose of a modern case history as a body of personal information conserved with a view to the three ends of social case work: (1) The immediate purpose of effective treatment of individual clients; (2) The ultimate purpose of general social betterment; and (3) The incidental purpose of establishing the case worker herself in critical thinking.

Substitute home economics worker for case worker and it will be recognized that discussion of these ends is of service to the home economics field if the practice of the method is not of immediate use.

Acquaintance with Mrs. Sheffield's book will insure its welcome to all whose particular concern is the promotion of family cohesion.

HARRIET TOWNSEND,
Teachers College, Columbia University.

Linen: From the Field to the Finished Product. By ALFRED S. MOORE. London and New York: Sir Isaac Pitman and Sons, Ltd., 1914, pp. 130. $1.00.

This little book is one of Pitman's Common Commodities and Industries Series, which includes several books that may be of interest to teachers of home economics for reference purposes. Among them are books on Tea, Coffee, Sugar, Wheat and Its Products, Soap, Furniture, Carpets, Cotton, Silk, Wool, Leather, Knitted Fabrics, and Cordage Fibers.

In *Linen* the author has given an accurate and complete, but at the same time popular and interesting, description of linen manufacturing in all its phases. His experience of a lifetime spent in the midst of the linen industry of Ireland has enabled him to throw in many side lights in his account, and the picture he sketches gives the feeling of reality and has a human interest.

In the introductory chapter the history of linen is traced, going back to the prehistoric period of ancient Egypt and coming down to the beginnings of linen making in Ireland when some of the Huguenots, exiled from their native France, took with them heir textile skill and started the industry which in time came to be of such importance in Ireland. The reader is impressed with the magnitude of the linen industry as it was before the war, especially the place it occupied in Ulster and the north of Ireland.

Following the historical discussion is a brief account of the foundation and growth of the Irish linen trade. There are accounts of the old Irish Linen Board, of the linen riots of the eighteenth century, and of the old linen markets. The story of the English and Scotch trade with their system of bounties is told, and finally the introduction of the factory system and the trade conditions during the two or three years preceding the war are described.

Following that portion of the book in which the production and handling of the raw material and the manufacturing processes are considered, the final chapters discuss varieties of linen, methods of grading and testing linen, and marketing problems. In the last two chapters the conditions of work, trade unions, and wages are given some consideration.

This book is clearly organized, has good illustrations, a table of contents and an index. It will commend itself to the teacher of textiles, as good reference material.

MARION WELLER,
University of Minnesota.

UNITED STATES DEPARTMENT OF AGRICULTURE BULLETINS REPORTING WORK OF THE OFFICE OF HOME ECONOMICS[1]

Digestibility of Some Animal Fats. By C. F. Langworthy and A. D. Holmes. U. S. Dept. Agr. Bul. 310 (1915). (Lard, beef fat, mutton fat, butter.) 5 cents.

Potatoes, Sweet Potatoes, and Other Starchy Roots as Food. By C. F. Langworthy. U. S. Dept. Agr. Bul. 468 (1917). (A summary and discussion.) Free.

Fats and Their Economical Use in the Home. By A. D. Holmes and H. L. Lang. U. S. Dept. Agr. Bul. 469 (1916). (A summary and discussion.) 5 cents.

Studies on the Digestibility of the Grain Sorghums. By C. F. Langworthy and A. D. Holmes. U. S. Dept. Agr. Bul. 470 (1916). (Corn meal, feterita, kafir, kaoliang, milo, wheat.) 5 cent.

Turnips, Beets and Other Succulent Roots, and Their Use as Food. By C. F. Langworthy. U. S. Dept. Agr. Bul. 503 (1917). (A summary and discussion.) Free.

Digestibility of Some Vegetable Fats. By C. F. Langworthy and A. D. Holmes. U. S. Dept. Agr. Bul. 505 (1917). (Cocoa butter, cocoanut oil, cottonseed oil, olive oil, peanut oil, sesame oil.) 5 cents.

Studies on the Digestibility of Some Animal Fats. By C. F. Langworthy and A. D. Holmes. U. S. Dept. Agr. Bul. 507 (1917). (Brisket fat, chicken fat, cream, egg-yolk fat, fish fat, goose fat.) 5 cents.

Experiments in the Determination of the Digestibility of Millets. By C. F. Langworthy and A. D. Holmes. U. S. Dept. Agr. Bul. 525 (1917). (Common millet, proso.) Free.

The Digestibility of the Dasheen. By C. F. Langworthy and A. D. Holmes. U. S. Dept. Agr. Bul. 612 (1917). 5 cents.

Digestibility of Certain Miscellaneous Animal Fats. By A. D. Holmes. U. S. Dept. Agr. Bul. 613 (1919). (Goat's butter, hard-palate fat, horse fat, kid fat, oleo oil, oleo stearin, ox-marrow fat, ox-tail fat, turtle fat.) Free.

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[1] In most cases the edition was small and the Department's quota is exhausted. However, the papers can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. for nominal sums as indicated.

Studies on the Digestibility of Some Nut Oils. By A. D. Holmes. U. S. Dept. Agr. Bul. 630 (1918). (Almond oil, black-walnut oil, Brazil-nut oil, butternut oil, English-walnut oil, hickory-nut oil, pecan oil.) 5 cents.

Experiments on the Digestibility of Fish. By A. D. Holmes. U. S. Dept. Agr. Bul. 649 (1918). (Boston mackerel, butterfish, grayfish, salmon.) Free.

Digestibility of Some Seed Oils. By A. D. Holmes. U. S. Dept. Agr. Bul. 687 (1918). (Corn oil, soy-bean oil, sunflower-seed oil, Japanese mustard-seed oil, rapeseed oil and charlock oil.) 5 cents.

Digestibility of Protein Supplied by Soy-Bean and Peanut Press-Cake Flours. By A. D. Holmes. U. S. Dept. Agr. Bul. 717 (1918). 5 cents.

Experiments on the Digestibility of Wheat Bran in a Diet Without Wheat Flour. By A. D. Holmes. U. S. Dept. Agr. Bul. 751 (1919). (Fine wheat bran, unground wheat bran.) Free.

Digestibility of Some By-Product Oils. By A. D. Holmes. U. S. Dept. Agr. Bul. 781 (1919). (Apricot-kernel oil, cherry-kernel oil, melon-seed oil, peach-kernel oil, pumpkin-seed oil, tomato-seed oil.) Free.

LIST OF ARTICLES PUBLISHED OUTSIDE THE DEPARTMENT

1917 to date

(Not available for distribution. May be consulted for references in libraries)

"The American Papaw and Its Food Value." By C. F. Langworthy. *Jour. Home Econ.*, 9 (1917), No. 11, pp. 505–511.

"Guide to the Nation's Dietary Needs." By H. W. Atwater. *Annals Amer. Acad. Pol. and Soc. Sci.*, Nov. 1917, Pub. No. 1154.

"Changing a Peace Time Ration for War Time." By C. L. Hunt. *Jour. Home Econ.*, 10 (1918), No. 8, pp. 371–374.

"How Agricultural Publications Can Be Obtained." By C. L. Hunt. *Gen. Fed. Mag.*, 17 (1918), No. 7, pp. 30–31.

"How Much Food Does It Take to Supply Us with the Calcium We Need." By M. C. Denton. *Jour. Home Econ.*, 10 (1918), No. 4, pp. 168–170.

"Kitchen Tests for Pectin in Jelly-Making." *Jour. Home Econ.*, 10 (1918), No. 11, pp. 520–521.

"Quick Method of Calculating Food Values." By C. L. Hunt. *Jour. Home Econ.*, 10 (1918), No. 5, pp. 212–218.

"Teaching Food Values." By C. F. Langworthy. *Jour. Home Econ.*, 10 (1918) No. 7, pp. 295-302.

"What Temperature is Reached Inside the Jar During Home Canning?" By M. C. Denton. *Jour. Home Econ.*, 10 (1918), No. 12, pp. 548–552.

"Woman's Committee Survey of Agencies for the Sale of Cooked Food." By H. W. Atwater. *Jour. Home Econ.*, 10 (1918), No. 9, pp. 419–424.

"Centigrade Scale Compared with Fahrenheit." *Jour. Home Econ.*, 11 (1919), No. 3, pp. 123, 124.

"Changes in Food Value of Vegetables Due to Cooking." By M. C. Denton. *Jour. Home Econ.*, 11 (1919), No. 4, pp. 143–154 and No. 5, pp. 200–209.

"Effect of Milling on the Digestibility of Graham Flour." By C. F. Langworthy and H. J. Deuel, Jr. *Proc. Nat. Acad. Sci.*, 5 (1919), No. 11, pp. 514–517.

"Methods to be Used in the Study of Gas Consumption of the Ordinary Household Range." *Jour. Home Econ.*, 11 (1919), No. 4, pp. 158–162.

"Office of Home Economics. Some Results of Recent Work." By C. F. Langworthy. *Jour. Home Econ.*, 11 (1918), No. 1, pp. 13–20.

"Office of Home Economics: Some Results of the Work Carried on During the Fiscal Year, 1918–1919." By C. F. Langworthy. *Jour. Home Econ.*, 11 (1919), No. 12, pp. 519–532.

"What is Experimental Cookery?" By M. C. Denton. *Jour. Home Econ.*, 11 (1919), No. 3, pp. 119–123.

"Absorption of Fat by Fried Batters and Doughs, and Causes of Variation." By M. C. Denton, E. Wengel, and L. Pritchett. *Jour. Home Econ.*, 12 (1920), No. 3 ,pp. 111–127.

"Digestibility of Certain Miscellaneous Vegetable Fats." By A. D. Holmes and H. J. Deuel, Jr. *Jour. Biol. Chem.*, 41 (1920), No. 2, pp. 227–235.

"Digestibility of Raw Corn Starch." By C. F. Langworthy and H. J. Deuel, Jr. *Proc. Amer. Soc. Biol. Chem., Jour. Biol. Chem.* 41 (1920), No. 3, p. L.

"Digestibility of Raw Corn, Potato, and Wheat Starches." By C. F. Langworthy and H. J. Deuel, Jr. *Jour. Biol. Chem.*, 42 (1920), No. 1, pp. 27–40.

"Digestibility of Raw Rice Starch." By C. F. Langworthy and H. J. Deuel, Jr. Res. Communic. et Demons., *Cong. Physiol.*, Paris, July 16–20 (1920), pp. [185–186].

"Digestibility of Steam Cooked Soy Beans and Peanuts." By A. D. Holmes. *Jour. Amer. Med. Assoc.*, 74 (1920), No. 12, pp. 728–800.

"Energy Elimination in Gaseous Exchange in Bananas, Pineapples, and Apples." By C. F. Langworthy, R. D. Milner, and H. G. Barott. *Proc. Amer. Soc. Biol. Chem., Jour. Biol. Chem.*, 41 (1920), No. 3, p. LXIX.

"Energy Expenditure in Household Tasks." By C. F. Langworthy and H. G. Barott. *Amer. Jour. Physiol.*, 52 (1920), No. 2, pp. 406–408.

"General Rules for Choosing Oven Temperatures." By M. C. Denton. *Jour. Home Econ.*, 12 (1920), No. 12, pp. 541–543.

"Possibilities in Home Economics Work." By M. F. Snyder. *Jour. Home Econ.*, 12 (1920), No. 4, pp. 166–168.

[Summary of Respiration Calorimeter Experiments on the Specific Heat and Energy Output of Celery and Eggs in Storage.] In Office of Home Economics. By C. F. Langworthy. Rpt. Dir. States Relations Service, Dept. Agr., (1920), pp. . 43, 44.

"Utilization of Kid, Rabbit, Horse, and Seal Meats as Food." By A. D. Holmes and H. J. Deuel, Jr. *Jour. Indus. and Engin. Chem.*, 12 (1920), No. 10, Pp. 1–7.

"What Constitutes Research in Home Economics?" By M. C. Denton. *Jour. Home Econ.*, 12 (1920), No. 2, pp. 58–63.

"Botulism and Home Canning." By. M. C. Denton. *Jour. Home Econ.*, 13 (1921), No. 6, pp. 261–266.

"Digestibility of Some Hydrogenated Oils." By A. D. Holmes and H. J. Deuel, Jr. *Amer. Jour. Phys.*, 54 (1921), No. 3, pp. 479–488.

"Effect of a Variation in Milling on the Digestibility of Wheat Flours." By C. F. Langworthy and A. D. Holmes. *Proc. Nat. Acad. Sci.* (In Press).

"Experiments in the Making of Doughnuts of Low Fat Absorption." By M. C. Denton and L. B. Pritchett. *Jour. Home Econ.*, 13 (1921), No. 6, pp. 255–260.

"Gastric Response to Foods." (Abstract). By M. C. Denton. *Jour. Home Econ.*, 13 (1921), No. 1, pp. 26–31 and No. 2, pp. 58–65.

"Heat Elimination and Gaseous Exchange in Celery and Eggs During Storage." By C. F. Langworthy and H. G. Barott. *Proc. Amer. Soc. Biol. Chem., Jour. Biol. Chem.*, 46 (1921), No. 1, p. XLIX–L.

NEWS FROM THE FIELD

FOURTH ANNUAL CONVENTION OF THE AMERICAN DIETETIC ASSOCIATION

LA SALLE HOTEL, CHICAGO, ILL., OCTOBER 24–26

Monday Morning, 9:30 a.m.

Administrative Section, Mary Lindsley, chairman, presiding

Discussion of Questionnaire arranged by Administrative Section, Mary A. Lindsley, Manager Grace Dodge Hotel, Washington

Equipment, George A. Smith, Chicago Range Co.

Some Administrative Problems, Agnes Gleason, Manager Parkway Tea House

Salesmanship, Mildred Robinson, Charge of Salesmanship, Chicago Public Schools

Monday Afternoon, 2:00 p.m.

Social Service Section, Lucy Gillett, chairman, presiding

To What Extent shall Racial Customs Enter into any Americanization Scheme? S. P. Breckinridge, Dean of Women, University of Chicago

Dietary Customs of Various Nationalities:

Syrians and Roumanians, Bessie Lee, Visiting Housekeeper Assn., Detroit

Jewish, Mrs. Mary Schapiro, United Hebrew Charities, N. Y. City

Negroes and Mountain Whites, Fairfax Proudfit, University of Tenn., Out-patient Medical Dept., Memphis, Tenn.

Italians, Reba Reed, Assn. for Improving the Condition of the Poor, N. Y. City

Monday Evening, Dinner Meeting, 6:30 p.m.

President's Address

Professional Spirit, Harriet Vittum, Northwestern University Settlement House

Internal Hygiene and Its Relation to Mood, Madison E. Bentley, Prof. of Psychology, University of Ill.

Training for Industrial Leadership, A. E. Morgan, President of Antioch College

Tuesday Morning, 9:30 a.m.

Education Section, Dr. Ruth Wheeler, chairman, presiding

What Nurses Need to Know about Food and Dietetics

Mary MacMillan, Supt. Presbyterian Hospital, Chicago, Ill.

Mrs. Higgins, Nursing Service, U. S. Navy Hospital

Experience Meeting, Strictly 2 Minute Speeches by 10 Dietitians

Hospital Training of Dietitians:

In Rochester, Minn., Mary Foley

In Peter Bent Brigham, Boston, Octavia Hall

In Johns Hopkins, Baltimore, Mrs. Agnes O'Dea

Tuesday Afternoon, 2:00 p.m.

Round Table Conferences:

I. Education, Dr. Wheeler, presiding

1. Reports by Sub-committees

a. A course in Dietetics for Nurses

b. Preliminary Course for Dietitians in Universities, Colleges, and Technical Schools

c. Hospital and Medical School Training for Dietitians

II. Dieto-Therapy, Miss Eckman, presiding
   1. Activities in Dieto-Therapy.—Laboratory, Research, and Clinical Application
   2. Educational Propaganda—Fields of Greatest Need

III. Social Service, Miss Gillett, presiding
   1. Coöperation in the Public Health Movement from a Medical Standpoint, Blanche Joseph, Michael Reese Hospital, Chicago, Ill.
   2. From a Nursing Standpoint, Mary Laird, Director Public Health Nursing Association, Rochester, N. Y.
   3. From the Social Worker's Standpoint, Florence Nesbit, Chicago United Charities

IV. Administration, Miss Lindsley, presiding
   1. Discussion on Equipment, labor, supplies, and food, led by division chairmen
   2. Placement of Equipment. Margaret Proctor, Equipment Expert, Economic Bureau, National Board, Y. W. C. A.

Tuesday Evening, 8:00 p.m.

Emma Gunther, Chairman Program Committee, presiding

The Sphere of the Dietitian, Dr. H. P. Howard, Prof. of Internal Medicine, State University of Iowa

The Selection of Personnel, Hugh Fullerton, The H. Black Co., Cleveland, Ohio

Food Poisoning, John Street, National Canners Association

Wednesday Morning, 9:30 a.m.

Fields for the Dietitian—15 Minute Talks
   Cafeteria and Institutional Managers, Blanche Geary, National Board, Y. W. C. A.
   The Hospital, Marion Peterson, Swedish Hospital
   The College Hall, Mabel Little

The National Federation of Business and Professional Women's Clubs, Lena Phillips, Executive Secretary

Business Meeting

Wednesday Afternoon, 2:00 p.m.

Dieto-Therapy Section, Rena Eckman, chairman, presiding
   1. The Dietary Needs of a Children's Hospital, Dr. Amy L. Daniels, Iowa Child Research Station, University of Iowa
   2. The Newer Ideas on the Dietetic Management of Diabetes and their Practical Working Out in the Hospital, Dr. R. T. Woodyatt, Assistant Professor of Medicine, University of Chicago

Wednesday Evening, 8:00 p.m.

Mrs. Mary de Garmo Bryan, president, presiding

Relationship Between Diet and Nervous Conditions with its Significance in Social Problems Dr. Sidney Kuh, Neurologist, Chicago

Systems of Follow-Up Work in Dietetics, Mrs. Gertrude Gates Mudge, Nutrition Division, American Red Cross

Human Engineering, Robert Wolf, Consulting Engineer, New York

Hotel reservations should be made at once. Accommodations may be secured at the following rates for single rooms; double rooms are in proportion.

Hotel La Salle, $2.50–$7.00; Drake Hotel, $6.00–$8.00; Hotel Blackstone, $5.00–$8.00; Hotel Sherman, $2.50–$6.00; Hotel Alexandria, $2.00 up; Congress Hotel, $3.00 up; Virginia Hotel, $3.00 up.

For information in regard to transportation rates, write to E. M. Geraghty, 801 S. Wright St., Champaign, Ill.

The Cincinnati Health Exposition, will be held in Music Hall, October 15–22, 1921, for the purpose of influencing a greater public attention toward family and community health. The exposition is the climax of a program of education combining the effects of almost every organization of every size and purpose in Greater Cincinnati. The exposition is a pioneer in a noteworthy field, and possesses a national significance. A combination of commercial and non-commercial exhibits properly constructed and operated, as it will be by the committee of business and professional men in charge of it, may serve as a model for similar enterprises throughout the country.

The departments of the city government will be well represented in this educational display, which will serve to mark Cincinnati's great progress in health activities during the past twenty-five years.

The Ellen Richards Research Prize of $1000, offered biennially by the Association of American College Women for Promoting Laboratory Research by Women (now the Association to Aid Scientific Research by Women) was awarded Dr. Eleanor Carothers of Philadelphia at the annual meeting of the association at Goucher College.

Dr. Eleanor Carothers received her bachelor's degree from the University of Kansas and her doctor's degree from the University of Pennsylvania. She is at present engaged in research work at the University of Pennsylvania on the genetical behavior of heteromorphic homologous chromosomes of circotettix (orthoptera).

The prize will be awarded again in 1922. Theses by women, based on independent laboratory research, are eligible for competition and must reach the Committee before February 25, 1922. For circulars of information and application blank, apply to Dr. Lilian Welsh, Goucher College, Baltimore.

Florida State College For Women. A new building has been completed and will be used for the home economics classes this fall.

University of Washington. Announcement has been made of the establishment of an annual graduate fellowship of $600 in textile research at the University of Washington. It is to be known as the Bon Marché Fellowship, as it is a gift of that store, the largest department store in Seattle. The holder will devote a few hours each week to analyses of fabrics for the store with time for sufficient research work to gain the master's degree in the eleven months covered by the fellowship.

The Personal Service Department, a most important and enterprising activity of the store, is under the direction of a former member of the staff of the Home Economics Department, Frances Grant Heverlo.

Rose Fraser, University of Washington 1918, has been awarded the fellowship for 1921.

Application for the fellowship for next year may be sent to the Home Economics Department, University of Washington, Seattle.

Research Work at Teachers College. The Department of Physiological Chemistry of Teachers College has inaugurated during the Summer Session four lines of research which will be continued during the coming academic year.

As a result of the work of Professor Sherman and Dr. La Mer, an adequate, basal diet has been developed for guinea pigs lacking only in the antiscorbutic vitamin. This diet permits experiments to be developed which will measure with a fair degree of accuracy the *C* vitamin content of foods under varying cooking conditions. This phase of the work has been made a program of research for the department, and during the summer the work was carried on with the pressure cooker by Miss Shelow of Ohio State University.

Ever since the announcement, by Johns, of the nutritive value of peanut flour, the department has been conducting coöperative experiments in the practical development of nutritious and appetizing recipes of peanut and wheat flour products with the department of cookery. This work has

been actively advanced during the summer session and Miss Eckman has begun during the summer the study of peanut flour supplementing *vs.* supplementing with meat residue, the diets being made adequate in all other factors to determine whether such supplementing justifies the claims made for the peanut or whether, as recently announced by McCollum, there are factors in the animal tissues which are of special significance.

A third phase of work that has moved forward during the summer has been the attention to the rickets problem, with especial reference to phosphate supplementing of cereal diets. This work has embraced the investigation of the value of combined phosphates such as phytin as a preventive of rickets, and the possibilities of better cereal combinations for baby feeding. During the summer this work was carried on by Professor Taylor of the Wake Forest Medical College under the Departmental direction.

The fourth series of researches have been continuation of the study of yeast stimulation by extracts and their relation to the *B* vitamin. Mr. Cherkasi of the College of Physicians and Surgeons has had this work in charge during the summer.

University of Illinois. Harriet Barto comes to the University of Illinois as assistant professor of home economics. She has been on the staff of Teachers College, as an instructor in nutrition. Bonnie Elizabeth Scholes is taking up the work of nutrition specialist for the Extension Department, this fall.

University of Kansas. Anne D. Blitz will come to the University this fall as the first Dean of Women, this position having just been created here. During the planning of the new dormitory for women she is acting in an advisory capacity to the building committee, because of her wide knowledge of housing and the college dormitory problem.

The new college cafeteria will be opened this fall, under the direction of Anna Barnum, who was formerly at Cornell University. She will be assisted by her sister Rebecca Barnum. For a time the cafeteria will occupy temporary quarters, but upon the completion of the Union Memorial Hall it will be given space there.

Cookery Courses for Men. Pennsylvania State College is planning to repeat this fall the courses for men which were given last spring. There is a course in buying and menu making, designed especially to meet the needs of the men who are acting as stewards for the various college clubs; and there is a class in actual cookery, where the men study elementary food principles and apply them, ending their work with a dinner for their friends. This course developed some technical skill, but in addition it gave an appreciation of the work involved in meal serving. After the dinner one man said, "Six men, five hours each—thirty hours, one dinner—and *one* woman does it!"

NOTES

Mrs. Alma Guillet will be at Mechanics Institute this fall teaching homemaking.

Bessie Pleasants will have charge of the practice house at Mechanics Institute.

Jessie Winchell has gone to the University of Vermont to have supervision of teacher training work.

Mabel Little, who has been connected with Marshall Field's in Chicago, has gone to the University of Wisconsin as director of halls and residence.

Rosa Briggs has gone to Drexel Institute to take charge of the cafeteria and to teach institutional administration.

Elsie Kirk has gone to the State Normal School at Towson, Md., as director of halls and residence.

Frances Dunning will be director of food service and instructor in institutional administration at the University of Nebraska this year.

Emma Winslow will spend this winter at the University of London, doing special work in sociology and economics. Before her return she will visit the continent, where she will study the work of various social agencies.